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THE NEWS LETTER

OF THE

BUREAU OF PUBLIC ROADS

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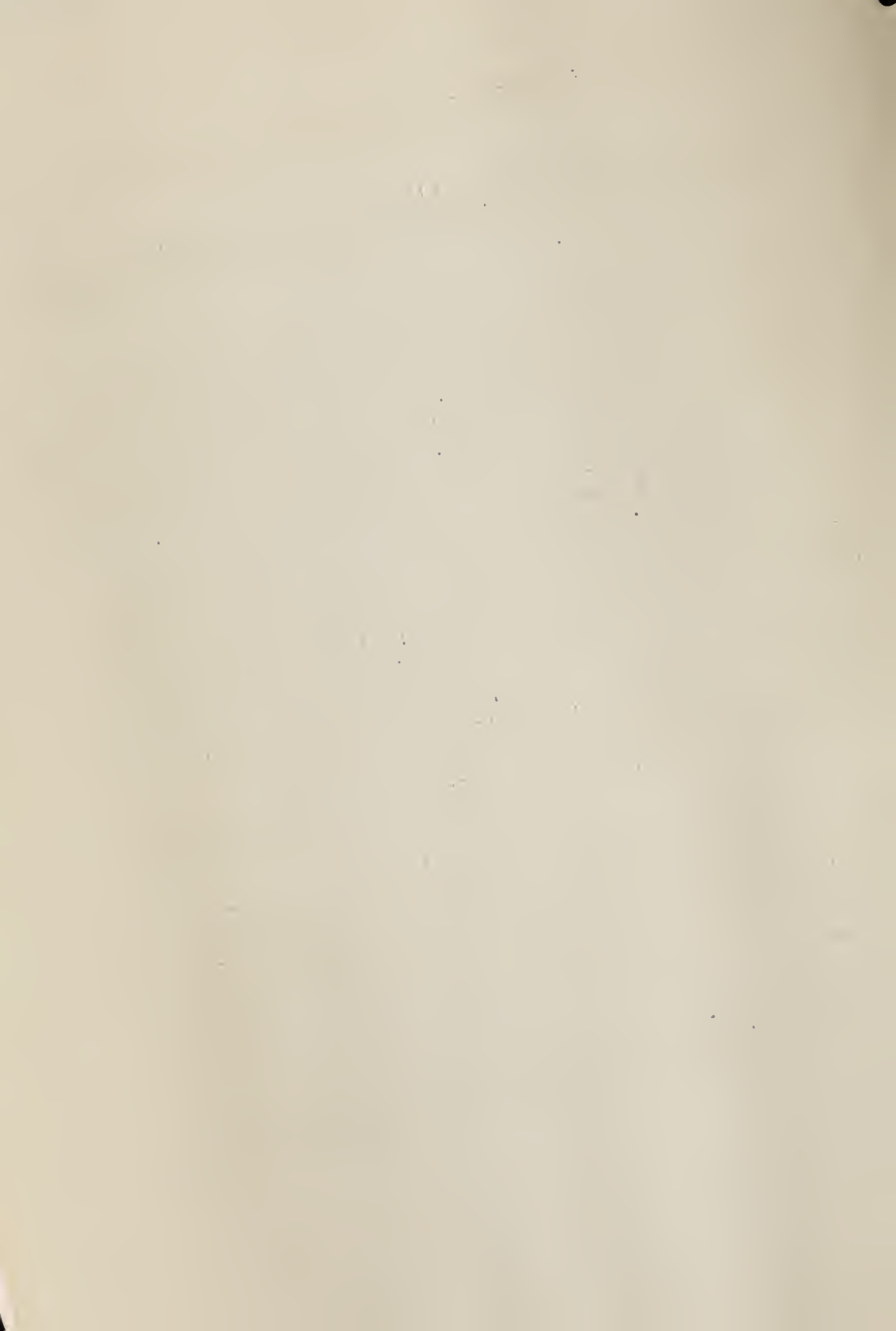
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EXTRACT FROM PRESIDENT COOLIDGE'S ADDRESS AT HAVANA

THIS ADDRESS WAS DELIVERED BEFORE THE CONFERENCE OF THE PAN AMERICAN CONFEDERATION OF AMERICAN STATES, ASSEMBLED AT HAVANA, CUBA, ON JANUARY 16, 1928.

"AN INCREASE OF INFORMATION DEPENDS LARGELY ON AN INCREASE IN THE MEANS OF COMMUNICATION. DURING THE ENTIRE NINETEENTH CENTURY INTERCOURSE BETWEEN THE AMERICAN REPUBLICS WAS EXCEEDINGLY DIFFICULT, AND THIS ISOLATION PROVED A SERIOUS OBSTACLE TO CLOSER UNDERSTANDING. THE TWENTIETH CENTURY, HOWEVER, AND ESPECIALLY THE LAST 10 YEARS HAVE WITNESSED ASTONISHING CHANGES IN THIS RESPECT. TRANSPORTATION BY WATER HAS BECOME RAPID, COMFORTABLE, AND RELATIVELY INEXPENSIVE. SHIPPING FACILITIES FROM THE UNITED STATES HAVE BEEN LARGELY IMPROVED. OUR GOVERNMENT IS GREATLY INTERESTED IN INCREASING THEIR EFFICIENCY. RAILWAY LINES HAVE BEEN EXTENDED SO THAT IT WILL SOON BE POSSIBLE TO TRAVEL WITH PRACTICALLY NO INTERRUPTION FROM THE NORTHERN BORDER OF THE UNITED STATES TO THE SOUTHERN BORDER OF EL SALVADOR, AND IN SOUTH AMERICA FROM PERU TO PATAGONIA. DURING VERY RECENT YEARS EVERY GOVERNMENT OF THIS HEMISPHERE HAS BEEN GIVING SPECIAL ATTENTION TO THE BUILDING OF HIGHWAYS, PARTLY WITH A VIEW TO ESTABLISHING FEEDERS TO THE RAILWAY LINES, BUT ALSO TO PROVIDE GREAT ARTERIES OF INTER-AMERICAN COMMUNICATION FOR MOTOR TRANSPORT. ON THE WALL OF MY OFFICE HANGS A MAP SHOWING PROPOSED HIGHWAYS CONNECTING THE PRINCIPAL POINTS OF OUR TWO CONTINENTS.

"I AM ASKING THE UNITED STATES CONGRESS TO AUTHORIZE SENDING ENGINEERING ADVISERS, THE SAME AS WE SEND MILITARY AND NAVAL ADVISERS, WHEN REQUESTED BY OTHER COUNTRIES, TO ASSIST IN ROAD BUILDING. THESE GRATIFYING CHANGES ARE ABOUT TO BE SUPPLEMENTED BY THE ESTABLISHMENT OF AVIATION ROUTES, PRIMARILY FOR THE TRANSPORTATION OF MAILS, WHICH WILL AFFORD TO OUR REPUBLICS A CHANNEL OF INTERCHANGE WHICH WILL FIND ITS ULTIMATE EXPRESSION IN CLOSER CULTURAL AND COMMERCIAL TIES AND IN BETTER MUTUAL COMPREHENSION. OUR CONGRESS ALSO HAS UNDER CONSIDERATION PROPOSALS FOR SUPPORTING SUCH AIR ROUTES. CITIZENS OF THE UNITED STATES ARE CONSIDERING INSTALLING THEM."



LATIN-AMERICAN DELEGATES AT HAVANA RECEIVE U.S. ROAD INFORMATION

(NOT FOR RELEASE)

SPANISH TRANSLATIONS OF THE MANUAL AND SPECIFICATIONS FOR THE MANUFACTURE AND DISPLAY AND ERECTION OF U. S. STANDARD ROAD MARKERS AND SIGNS, AND HIGHWAY TRANSPORTATION - THE REPORT OF THE HIGHWAY TRANSPORT COMMITTEE OF THE AMERICAN SECTION OF THE INTERNATIONAL CHAMBER OF COMMERCE - WERE PRINTED AND SENT TO THE DELEGATES TO THE SIXTH INTERNATIONAL CONFERENCE OF AMERICAN STATES HELD AT HAVANA, CUBA, DURING THE MIDDLE OF JANUARY. THE BOOKLETS WERE DISTRIBUTED WITH THE COMPLIMENTS OF THE PAN AMERICAN CONFEDERATION FOR HIGHWAY EDUCATION. LATER THE SAME PUBLICATIONS WILL BE USED FOR WIDE DISTRIBUTION THROUGHOUT LATIN AMERICA IN ORDER TO STIMULATE INTEREST IN HIGHWAY DEVELOPMENT.

THE FIRST BOOK IS THE STANDARD SIGN MANUAL PREPARED BY THE BUREAU IN COOPERATION WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS. THE OTHER BULLETIN IS A COMPLETE RESUME OF THE PRINCIPLES OF HIGHWAY ECONOMICS, CONSTRUCTION, REGULATION, AND FINANCE AS PRACTICED IN THIS COUNTRY TODAY.

IN ADDITION TO THE DISTRIBUTION OF THESE BOOKLETS, ARRANGEMENTS HAVE BEEN MADE WITH THE ENGINEERING MAGAZINE INGENIERIA INTERNACIONAL TO REPRINT A SERIES OF ARTICLES WRITTEN BY E. W. JAMES - CHIEF OF THE DIVISION OF DESIGN - RELATIVE TO HIGHWAY CONSTRUCTION, MAINTENANCE, OPERATION, FINANCE, AND ACCOUNTING. THE ARTICLES WILL BE BOUND TOGETHER IN A SINGLE VOLUME WITH AN INTRODUCTION BY MR. MACDONALD. AS MANY AS 10,000 COPIES OF THIS BOOK WILL BE DISTRIBUTED AND IT IS EXPECTED TO BECOME A STANDARD DOCUMENT ON HIGHWAY MATTERS THROUGHOUT LATIN AMERICA. ALREADY THERE HAVE BEEN REQUESTS FROM OTHER COUNTRIES THAT THE BOOK BE TRANSLATED INTO FRENCH AND ENGLISH FOR INTERNATIONAL DISTRIBUTION.

BUREAU ADOPTS NEW CONTRACT PROCEDURE ON FOREST AND PARK ROAD WORK

DIGESTED FROM AN ADDRESS MADE BY DR. HEWES BEFORE THE ANNUAL MEETING OF THE NORTHERN CALIFORNIA CHAPTER OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, IN SAN FRANCISCO, ON DECEMBER 16, 1927.

(NOT FOR RELEASE)

RECENT REVISIONS IN THE CONTRACT PROCEDURE OF THE BUREAU, AFFECTING FOREST AND NATIONAL PARK ROAD WORK, WERE OUTLINED BY DR. HEWES, IN AN ADDRESS BEFORE THE ANNUAL CONVENTION OF THE NORTHERN CALIFORNIA CHAPTER OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, IN SAN FRANCISCO, ON DECEMBER 16, 1927, AND WERE FORMALLY ENDORSED BY THAT ORGANIZATION. THE REVISIONS, AS DESCRIBED BY DR. HEWES, HAVE TO DO WITH CERTAIN CHANGES IN OUR PROCEDURE, PARTICULARLY WITH REGARD TO THE DETERMINATION OF THE BIDDER'S RESPONSIBILITY.

SINCE THE COMPTROLLER GENERAL HAD RULED, IN A PREVIOUS CASE, THAT ANY CONTRACTOR, WHO HAD RECEIVED PLANS AND COULD FURNISH A SATISFACTORY BOND, MUST BE CONSIDERED A RESPONSIBLE BIDDER; IT BECAME NECESSARY TO ADOPT SOME PROCEDURE WHEREBY THE INEXPERIENCED OR INCOMPETENT CONTRACTORS MIGHT BE ELIMINATED. THE NEW PROCEDURE PURPOSES TO ACCOMPLISH THIS BY THE PREQUALIFICATION OF BIDDERS TO DETERMINE THEIR RESPONSIBILITY BEFORE THEY RECEIVE PLANS FOR A SPECIFIC PROJECT. IF THE BIDDER FAILS TO QUALIFY, PLANS WILL BE DENIED HIM. THE EXAMINATION WILL BE BASED UPON THE REPORT SUBMITTED BY THE BIDDER ON THE STANDARD QUESTIONNAIRE AND FINANCIAL STATEMENT ADOPTED BY THE JOINT CONFERENCE ON CONSTRUCTION PRACTICES. THE QUALIFICATIONS INCLUDE A SATISFACTORY SHOWING AS TO EXPERIENCE, KNOWLEDGE OF THE JOB IN HAND, AN ADEQUATE PLAN OF PROCEDURE, EQUIPMENT, AND FINANCIAL STRENGTH. THIS INFORMATION WILL BE HELD IN STRICT CONFIDENCE EXCEPT THAT STATE AND FEDERAL OFFICIALS MUST BE EXPECTED TO EXCHANGE INFORMATION CONCERNING PROSPECTIVE BIDDERS. HABITUAL TARDINESS ON THE PART OF THE BIDDERS IN COMPLETING OTHER PROJECTS WILL NOT BE OVERLOOKED UNDER THE ITEM OF EXPERIENCE.

ANOTHER INNOVATION, THE RESPONSE TO WHICH HAS BEEN VERY GRATIFYING, CONSISTS IN THE PRELIMINARY FALL ADVERTISING OF PARK-ROAD PROJECTS, TO ENABLE PROSPECTIVE BIDDERS TO LOOK OVER THE WORK WITHOUT SNOW COVERING. THIS IS NOT THE FINAL ADVERTISING OF THE PROJECT AND MAY NOT STATE THE DATE OF THE BID OPENING.

IT IS AN IMPROVEMENT IN THE PROCEDURE DESIGNED TO OVERCOME THE DELAY IN BEGINNING CONSTRUCTION OPERATIONS, CAUSED BY THE WINTER OR SPRING LETTING OF CONTRACTS. IN THE HIGH SIERRA, CASCADE, AND ROCKY MOUNTAINS, IT IS IMPOSSIBLE TO EXPECT WORKING-WEATHER CONDITIONS MUCH BEYOND 130 DAYS, SOMETIMES 150 DAYS. OBVIOUSLY EVERY EFFORT MUST BE BENT TOWARD UTILIZING THIS WEATHER.

DR. HEWES ALSO SUGGESTED THAT THERE WOULD BE A QUICK RESPONSE IN THE NUMBER AND QUALITY OF BIDDERS IF ENGINEERS WOULD INCREASE THE PROMPTNESS OF RELIABLE MONTHLY PAYMENTS AND THE SPEED OF FINAL SETTLEMENTS. THE NEW GOVERNMENT CONTRACT FORM REDUCES THE RETENT FROM 15 TO 10 PER CENT AND PROVIDES THAT THIS MAY BE WAIVED AFTER THE PROJECT IS 50 PER CENT COMPLETED. THE NEW FORM ALSO PERMITS BIDDERS' BONDS.

BUREAU MAKES RAPID SURVEY OF NEW ENGLAND FLOOD DAMAGE

CONTRIBUTED BY G. G. CLARK OF THE DIVISION OF CONTROL

(NOT FOR RELEASE)

IN RESPONSE TO REQUESTS FROM THE GOVERNORS OF VERMONT AND NEW HAMPSHIRE, THE BUREAU UNDERTOOK AND COMPLETED A RAPID SURVEY OF THE NEW ENGLAND FLOOD DAMAGE. THE SURVEY, THE FIELD WORK FOR WHICH CONSUMED ABOUT ONE MONTH'S TIME, REQUIRED THE IMMEDIATE ORGANIZATION OF A STATISTICAL FORCE IN ORDER TO SECURE FIRST-HAND INFORMATION CONCERNING THE EXTENT OF THE DAMAGE BEFORE THE EVIDENCE HAD BEEN OBLITERATED BY RECONSTRUCTION AND REPAIR WORK.

THE FLOOD WAS CAUSED BY AN UNPRECEDENTED RAINFALL OF MORE THAN 8 INCHES, WHICH OCCURRED DURING NOVEMBER 3-4, 1927, AND EXTENDED PRACTICALLY THROUGHOUT VERMONT AND THE GREATER PART OF NEW HAMPSHIRE. THE HIGHWAY AND RAILROAD SERVICE OF VERMONT WAS INTERRUPTED AT MANY POINTS AND, TO A LESSER DEGREE, A SIMILAR CONDITION EXISTED IN NEW HAMPSHIRE.

THE MOUNTAINOUS CHARACTER OF THE COUNTRY ACCELERATED THE DISCHARGE OF THE RAIN WATER INTO THE RIVERS AND PRODUCED STAGES OF HIGH WATER MORE EXTREME THAN HAD BEEN PREVIOUSLY RECORDED. THIS CAUSED THE DESTRUCTION OF BRIDGES, BOTH RAILWAY AND HIGHWAY, AND OF THE ROADS THEMSELVES ADJACENT TO STREAMS.

THE RESULTS OF THE SURVEY SHOWED, FOR EACH STATE, THE DAMAGE DONE TO FEDERAL-AID PROJECTS COMPLETED OR UNDER CONSTRUCTION, THE DAMAGE TO STATE-AID AND TRUNK-LINE ROUTES, STATE PROJECTS, AND TOWN ROADS, THUS INDICATING THE SOURCES AND AMOUNTS OF FUNDS REQUIRED TO REPLACE OR REPAIR THE DAMAGED SECTIONS.

FIELD ORGANIZATION

DISTRICT ENGINEER GUY H. MILLER, TROY, N.Y., WITH JURISDICTION OVER THE FIELD OPERATIONS OF FEDERAL HIGHWAY WORK IN THESE TWO STATES, WAS PLACED IN CHARGE OF THE SURVEY. FIELD HEADQUARTERS WERE OPENED IN THE POST OFFICE BUILDING AT MONTPELIER, VT., ABOUT NOVEMBER 26, WITH MR. MILLER IN CHARGE. MR. J. A. WHITTAKER, FEDERAL REPRESENTATIVE IN NEW HAMPSHIRE, AT CONCORD, ASSUMED CHARGE OF THE SURVEY IN THAT STATE UNDER GENERAL INSTRUCTIONS FROM MR. MILLER.

A THREE-PAGE FIELD-FORM WAS DEVELOPED FOR THE USE OF THE FIELD APPRAISERS ON BRIDGE DAMAGE, WHILE A SINGLE-PAGE FORM SUFFICED FOR HIGHWAY APPRAISAL. THE SALIENT FEATURES OF THE BRIDGE FORM WERE AS FOLLOWS:

1. - LOCATION OF THE BRIDGE SITE.
2. - CLASS OF HIGHWAY SERVED; VIZ., FEDERAL-AID, STATE-AID, TRUNK-LINE, OR TOWN.
3. - DESCRIPTION OF BRIDGE: KIND, SPAN, ETC.
4. - DESCRIPTION OF DAMAGE SUFFERED BY SUPERSTRUCTURE, SUBSTRUCTURE, AND APPROACHES.
5. - RECOMMENDATIONS FOR NEW WORK, INCLUDING RELOCATION, RAISING OF GRADE, BANK PROTECTION, AND CHANNEL CONTROL.
6. - ESTIMATES OF COST OF NEW SPAN, PIERS, APPROACHES, BANK PROTECTION, CHANNEL CONTROL, ETC.

THE HIGHWAY FORM INDICATED THE LOCATION OF THE DAMAGED SECTIONS ALLOCATED BY ROUTES. THE ESTIMATES OF DAMAGE INCLUDED THE LENGTH, WIDTH, AND DEPTH OF THE WASHED OUT PORTIONS, AND THE QUANTITIES REQUIRED TO REPAIR THE FILLS, CUTS, AND SURFACING.

UNIT PRICES FOR THE ITEMS OF ROAD AND BRIDGE REPAIR AND REPLACEMENT WERE DEVELOPED FROM THE AVERAGE PRICES PAID FOR SUCH ITEMS IN CONTRACT WORK ACCOMPLISHED DURING 1927.

BY NOVEMBER 29 A COMBINED FIELD FORCE COMPOSED OF ENGINEERS FROM THE WASHINGTON OFFICE AND FROM DISTRICT 9, TOTALLING 13 MEN, WAS DETAILED TO THE INVESTIGATION OF THE DAMAGED SECTIONS. VERMONT AND NEW HAMPSHIRE ARE ADMINISTRATIVELY DIVIDED INTO TWELVE AND TEN DISTRICTS, RESPECTIVELY, UNDER THE SUPERVISION OF A COMMISSIONER OR DISTRICT ENGINEER, WHO REPORTS TO THE STATE HIGHWAY COMMISSIONER. A BUREAU REPRESENTATIVE WAS ASSIGNED TO EACH DISTRICT TO WORK IN COOPERATION WITH THE STATE REPRESENTATIVE WHO SERVED AS AN ADVISER AS TO THE LOCATION OF THE DAMAGED SECTIONS AND AS TO WAYS AND MEANS OF REACHING AND APPRAISING THEM.

AS RAPIDLY AS INSPECTIONS WERE COMPLETED, THE APPRAISAL SHEETS WERE MAILED TO MONTPELIER OR CONCORD. ON COMPLETION OF THE WORK IN ONE DISTRICT, THE APPRAISER WAS ASSIGNED TO ANOTHER DISTRICT. INSPECTIONS WERE MADE IN EACH OF THE TWELVE DISTRICTS IN VERMONT, WHILE ONLY SEVEN DISTRICTS WERE COVERED IN NEW HAMPSHIRE - THREE IN THE SOUTHERN SECTION OF THE STATE SUFFERING LITTLE OR NO DAMAGE.

FIELD CONDITIONS

DAMAGED BRIDGES AND CULVERTS WERE ESTIMATED BY THE HIGHWAY DEPARTMENT OF VERMONT TO TOTAL 1,249, THUS IMPOSING MANY OBSTRUCTIONS TO HIGHWAY TRAFFIC, WHILE CROSS-STATE RAILWAY TRAFFIC WAS COMPLETELY STOPPED DURING THE PROGRESS OF THE SURVEY. THUS, THE USE OF DETOURS OVER MINOR ROADS BECAME IMPERATIVE. TEMPERATURES BELOW FREEZING GENERALLY PREVAILED, WITH A BLANKET OF SNOW AFTER ABOUT DECEMBER 8. THE PERIOD OF DAYLIGHT DURING THE SURVEY WAS LIMITED TO ABOUT NINE HOURS PER DAY, WHICH NECESSARILY INCREASED THE NUMBER OF DAYS SPENT IN THE FIELD.

BECAUSE OF THE DIFFICULTIES OF TRAVEL, LITTLE PERSONAL SUPERVISION COULD BE GIVEN TO THE APPRAISERS IN THE FIELD, ALTHOUGH FREQUENT CONFERENCES WERE HELD BY TELEPHONE.

MONTPELIER OFFICE

THE APPRAISAL DATA, UPON BEING RECEIVED FROM THE FIELD, WERE DIVIDED BY DISTRICTS AND FURTHER SUBDIVIDED INTO CLASSES OF HIGHWAYS. EACH REPORT AFTER BEING GIVEN AN IDENTIFICATION NUMBER, WAS EXAMINED FOR CONSISTENCY OF PRICES, IN THE CASE OF HIGHWAY DAMAGE. FOR BRIDGES, A MORE COMPLETE EXAMINATION,

COVERING THE LENGTH OF SPAN, TYPE, AND ESTIMATED COST, ETC., WAS MADE BY A BRIDGE ENGINEER FROM THE WASHINGTON OFFICE WHO MADE A PERSONAL VISIT TO PRACTICALLY ALL OF THE BRIDGES DAMAGED BY THE FLOOD IN VERMONT, AND THE MORE IMPORTANT BRIDGES IN NEW HAMPSHIRE.

REPORTS WERE THEN ENTERED ON A SCHEDULE MADE UP BY STATE DISTRICTS, SHOWING THE IDENTIFICATION NUMBER OF THE REPORT, THE NEW WORK TO BE DONE, THE LENGTH OF THE DAMAGED SECTION, AND THE ESTIMATED COST OF REPLACEMENT, WHICH WAS INDICATED AS ROAD OR BRIDGE DAMAGE. THESE COSTS WERE ENTERED UNDER THE APPROPRIATE COLUMN HEADED "FEDERAL ROUTE", "STATE-AID ROUTE", AND "TOWN ROUTE." SCHEDULES FOR DISTRICTS WERE TOTALED, DIVIDED INTO ROAD AND BRIDGE DAMAGES, AND POSTED TO A RECAPITULATION SHEET FOR EACH STATE. IN THE MONTPELIER OFFICE, REPORTS WERE REVIEWED, CLASSIFIED, AND POSTED AS RAPIDLY AS THEY WERE RECEIVED.

BY DECEMBER 16 THE FIELD AND OFFICE WORK IN VERMONT WAS PRACTICALLY COMPLETED, AND ON DECEMBER 17 MR. MILLER TRANSFERRED HEADQUARTERS TO CONCORD, N. H., WHERE FIELD WORK WAS ABOUT COMPLETED.

THE REVIEW AND ASSEMBLY OF THE NEW HAMPSHIRE DATA WAS IMMEDIATELY UNDERTAKEN. ON DECEMBER 21 FINAL FIGURES WERE OBTAINED FOR NEW HAMPSHIRE, AND PRACTICALLY COMPLETE FIGURES WERE AT HAND FOR VERMONT. THE FIELD PARTY WAS THEN DISBANDED AND THE COMPLETE FILES OF THE FIELD DATA WERE SENT TO THE WASHINGTON OFFICE. A FEW REPORTS, DELAYED IN THE MAILS, AND COVERING INSPECTIONS IN VERMONT, WERE RECEIVED AFTER THE RETURN TO WASHINGTON AND WERE INCORPORATED IN THE FINAL FIGURES.

GENERAL PURPOSE OF THE SURVEY

HIGHWAY IMPROVEMENT IN THE TWO STATES HAS BEEN AND IS, TO A CONSIDERABLE EXTENT, A COOPERATIVE PROCEDURE; THAT IS, FEDERAL ROUTES ARE IMPROVED WITH FEDERAL AND STATE FUNDS, STATE-AID AND TRUNK-LINE ROUTES WITH STATE AND TOWN FUNDS, STATE ROADS (LIMITED TO A SMALL MILEAGE) WITH STATE FUNDS, AND TOWN ROADS WITH TOWN FUNDS, THE TOWN UNIT BEING APPROXIMATELY COMPARABLE WITH THE MIDDLE WEST TOWNSHIP.

WHILE A LARGE AMOUNT OF DETAILED INFORMATION WAS SECURED CONCERNING BRIDGES DESTROYED, IT WAS NOT CONTEMPLATED THAT THE DATA SHEETS FOR A PARTICULAR PROJECT WOULD BE USED AS THE SOLE BASIS FOR PLANNING NEW WORK. THE ESTIMATES OF DAMAGES TO BRIDGES WERE PREPARED ON THE BASIS OF THE PRESENT REPLACEMENT COST WITH

AN ADEQUATE STRUCTURE, AS IN GENERAL NO DATA WERE AVAILABLE TO SHOW THE ORIGINAL COST OF THE STRUCTURES. MANY OF THE OLD BRIDGES WERE COMPLETELY DESTROYED. MANY OF THEM WERE BUILT OF WOOD AND WERE NOT WELL ADAPTED TO THE REQUIREMENTS OF PRESENT-DAY TRAFFIC.

DAMAGES TO THE ROADS WERE ESTIMATED ON THE BASIS OF RE-CONSTRUCTION OR RELOCATION OF THE ROADWAY, USING MATERIALS SIMILAR TO THOSE CONTAINED IN THE DAMAGED SECTIONS.

THE RAPID COMPLETION OF THE SURVEY UNDER SUCH DIFFICULTIES OF WEATHER, TRAVEL, AND TEMPERATURE IS DUE TO THE SPLENDID ORGANIZATION DEVELOPED BY MR. MILLER, THE AID GIVEN BY THE PERSONNEL OF THE TWO STATE HIGHWAY DEPARTMENTS, AND THE EFFICIENT SERVICE RENDERED BY THE ENGINEERS OF THE BUREAU WHO WERE DETAILED TO THE FIELD INSPECTIONS.

A BRIEF SUMMARY OF THE ESTIMATED COST OF REPAIRS AND REPLACEMENTS CAUSED BY THE FLOOD FOLLOWS:

VERMONT

FLOOD DAMAGE TO ROADS AND BRIDGES PRELIMINARY SURVEY BY THE BUREAU OF PUBLIC ROADS

	ROADS	BRIDGES	TOTALS
FEDERAL-AID PROJECTS	\$ 97,913	\$ 122,200	\$ 220,113
FEDERAL-AID ROUTES, OUTSIDE OF LIMITS OF PLACES HAVING MORE THAN 2,500 POPULATION	885,300	1,206,720	2,092,020
FEDERAL-AID ROUTES EXCLUDED AS ABOVE	<u> </u>	<u>341,600</u>	<u>341,600</u>
TOTAL FEDERAL SYSTEM	983,213	1,670,520	2,653,733
STATE-AID SYSTEM	690,930	2,263,122	2,954,052
TOWN SYSTEM	<u>399,288</u>	<u>1,370,396</u>	<u>1,769,684</u>
TOTALS	\$2,073,431	\$5,304,038	\$7,377,469

NEW HAMPSHIRE

FLOOD DAMAGE TO ROADS AND BRIDGES. PRELIMINARY SURVEY BY THE BUREAU OF PUBLIC ROADS

	ROADS	BRIDGES	TOTALS
FEDERAL-AID PROJECTS \$	5,790.50	\$ 28,095.00	\$ 33,885.50
FEDERAL-AID ROUTES, OUTSIDE OF LIMITS OF PLACES HAV- ING MORE THAN 2,500 POPULATION	136,287.50	433,145.00	569,432.50
*FEDERAL-AID ROUTE IN THE TOWN OF WALPOLE WHICH MAY CONTAIN MORE THAN 2,500 POPULATION		50,000.00	50,000.00
TOTAL FEDERAL SYSTEM	142,078.00	511,240.00	653,318.00
STATE ROADS	148,240.00	83,500.00	231,740.00
STATE-AID AND TRUNK-LINE ROADS	230,584.75	326,027.00	556,611.75
TOWN ROADS	706,618.46	524,426.00	1,231,044.46
	1,227,521.21	1,445,193.00	2,672,714.21
FOREST PROJECTS	17,595.00	19,830.00	37,425.00
TOTALS	\$1,245,116.21	\$1,465,023.00	\$2,710,139.21

*DAMAGES IN THE TOWN OF WALPOLE CONSISTED OF THE DESTRUCTION OF THE APPROACH AND UNDERPASS AT THE EAST END OF AN INTERSTATE BRIDGE TO BELLOWS FALLS, VERMONT. TOTAL DAMAGE ESTIMATED TO BE \$100,000 - ONE-HALF TO BE PAID BY THE RAILROAD.

DISTRIBUTION OF SURPLUS WAR MATERIAL PRACTICALLY COMPLETED

(NOT FOR RELEASE)

THE DISTRIBUTION OF THE SURPLUS WAR MATERIAL WHICH, SINCE 1919, HAS BEEN ADMINISTERED BY THE BUREAU, WAS PRACTICALLY DISCONTINUED ON JUNE 30 LAST. BY THAT TIME THE SUPPLY OF MATERIAL SUITABLE FOR ROAD WORK HAD BEEN PRACTICALLY EXHAUSTED, AND THERE REMAINED ONLY A LIMITED SUPPLY OF EXPLOSIVES, DISTRIBUTION OF WHICH FOR AGRICULTURAL PURPOSES WILL BE DISCONTINUED BY JULY 1, 1928, AND THEREAFTER ALL EXPLOSIVES WILL BE RESERVED FOR USE BY GOVERNMENT AGENCIES. AT THE PRESENT RATE OF DISTRIBUTION IT IS EXPECTED THAT THE AVAILABLE SUPPLY OF EXPLOSIVES WILL LAST FOR ABOUT TWO YEARS MORE.

SINCE THE WORK OF DISTRIBUTION WAS BEGUN, A WIDE VARIETY OF MATERIAL HAS BEEN SHIPPED FROM THE VARIOUS CAMPS AND CONCENTRATION POINTS THROUGHOUT THE COUNTRY, THE TOTAL AS OF JANUARY 1, 1928, AMOUNTING TO MORE THAN 972,833,000 POUNDS WITH AN ESTIMATED VALUE OF NEARLY \$262,392,000.

MATERIAL VALUED AT NEARLY \$224,737,000 HAS BEEN SHIPPED TO THE SEVERAL STATE HIGHWAY DEPARTMENTS, AND THIS MATERIAL, INCLUDING 30,627 MOTOR TRUCKS AND 4,754 AUTOMOBILES, IN MANY CASES HAS FORMED THE NUCLEUS ABOUT WHICH THE STATE DEPARTMENTS HAVE BUILT THEIR MAINTENANCE ORGANIZATIONS.

THE TOTAL NUMBER OF MOTOR VEHICLES DISTRIBUTED IS 36,749, THIS NUMBER INCLUDING ALL TRUCKS AND AUTOMOBILES DISTRIBUTED EITHER TO STATES OR TO GOVERNMENT DEPARTMENTS. IN ADDITION THERE HAVE BEEN DISTRIBUTED 3,227 TRACTORS, 3,807 TRAILERS, 9,833 WAGONS AND CARTS, A LARGE QUANTITY OF MISCELLANEOUS MOTOR VEHICLE AND TRACTOR SPARE PARTS, ENGINEER AND SHOP TOOLS, SHOP MACHINERY, RAIL AND ACCESSORIES, STRUCTURAL STEEL AND MISCELLANEOUS ROAD BUILDING SUPPLIES.

THE MATERIAL DISTRIBUTED TO GOVERNMENT AGENCIES HAS AN ESTIMATED VALUE OF APPROXIMATELY \$27,240,000, ALLOCATED AS FOLLOWS: BUREAU OF PUBLIC ROADS, \$7,082,800; FOREST SERVICE, \$2,609,800; NATIONAL PARK SERVICE, \$661,300; AND OTHER GOVERNMENT AGENCIES, \$16,856,100.

EXPLOSIVES DELIVERED TO STATE HIGHWAY DEPARTMENTS AND GOVERNMENT AGENCIES ARE INCLUDED IN THE ABOVE STATEMENTS OF VALUE.

THOSE DELIVERED TO VARIOUS STATE AGENCIES FOR DISTRIBUTION TO FARMERS FOR LAND CLEARING ACCOUNT FOR \$10,445,000, THE REMAINDER OF THE TOTAL VALUE OF ALL MATERIALS.

THE TOTAL DISTRIBUTION OF EXPLOSIVES FOR ALL PURPOSES UP TO JANUARY 1, WAS OVER 118,840,800 POUNDS. ITS ESTIMATED VALUE AT THE CURRENT MARKET PRICE, WITHOUT ACCESSORIES, WAS NEARLY \$17,315,000; AND AS THE MANUFACTURE AND DISTRIBUTION WAS MADE AT A COST OF \$6,060,900, THE SAVING TO THE STATE AND NATIONAL AGENCIES AND FARMERS, THAT RECEIVED IT, WAS UPWARDS OF \$11,254,000.

THE EXPLOSIVES DISTRIBUTED INCLUDED STRAIGHT AND MODIFIED T.N.T., GRENADE POWDER, PICRIC ACID, SODATOL, BLACK POWDER, DYNAMITE, AND PYRATOL. THE STRAIGHT T.N.T., AND THE GRENADE AND BLACK POWDER WERE SUITABLE FOR USE IN BULK AS RECEIVED FROM THE WAR DEPARTMENT AND WERE SO DISTRIBUTED. THE MODIFIED T.N.T., PICRIC ACID, SODATOL, AND PYRATOL WERE MANUFACTURED FROM SURPLUS WAR MATERIALS AND DISTRIBUTED IN CARTRIDGE FORM. THE DYNAMITE WAS OBTAINED BY THE EXCHANGE OF SURPLUS WAR MATERIALS FOR COMMERCIAL EXPLOSIVES.

THE FOLLOWING TABLES SUMMARIZE THE DISTRIBUTION OF ALL MATERIALS AS OF JANUARY 1, 1928.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
WAR MATERIALS BOARD

STATEMENT SHOWING CLASS OF MATERIAL SHIPPED

Period: April 1, 1919 to January 1, 1923.

ITEM	WEIGHT SHIPPED (lbs)	ESTIMATED VALUE (dollars)
Motor Vehicles (36719)	255,884.678	\$ 101,808,899.40
Tractors (3227)	43,506.448	15,086,901.12
Trailers (3807)	12,563.183	2,284,120.00
Wagons and Carts (9833)	18,747.700	1,903,705.00
Motor Vehicle Spare Parts	29,714.250	24,232,131.50
Tractor Spare Parts	2,309.356	1,531,365.00
Engineer and Shop Tools	3,539.150	3,529,769.90
Shop Machinery	14,269.497	7,074,051.60
Rail and Accessories	71,040.340	1,065,605.10
Structural Steel	67,795.406	1,738,233.91
Hospital Supplies (To Govt. Agencies only)	2,047.116	2,366,134.00
Explosives and Accessories	118,840.834	20,029,728.25
Miscellaneous Road Building Supplies	332,574.935	79,741,043.31
TOTAL	972,832,893	\$ 262,391,688.09

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
WAR MATERIALS BOARD

SUMMARY SHOWING VALUE OF ALL SURPLUS WAR MATERIAL DISTRIBUTED

Period: April 1, 1919 to January 1, 1928.

Consignee	:	:	Value
Bureau of Public Roads	:	:	\$ 7,082,819.37
Forest Service	:	:	2,609,820.10
National Park Service	:	:	661,295.63
Other Government Agencies	:	:	16,856,120.60
State Highway Departments	:	:	224,736,549.72
Farmers for Land Clearing	:	:	10,445,082.67
	:	:	262,391,688.09

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
WAR MATERIALS BOARD

SUMMARY OF TRUCKS AND AUTOMOBILES DELIVERED

Period: April 1, 1919 to July 1, 1927

Light		Inter-Mech		Heavy		Pierce		Standard		Kelly-		G.M.C.		Misc. Total		Automobile		Total Total	
Aviation	National	Quad	Aviation	National	Federal	Aviation	National	Federal	Class	Trucks	Trucks	Trucks	Trucks	Trucks	Trucks	Trucks	Trucks	Trucks	Trucks
	13	19	3	56	57	118	5	10	39	7	3	53	383	205	116	49	370	753	
Forest Service	21	18	29	23	7	68	1	1	3	2	50	14	210	21	18		59		
Nat. Fr. Service	5	3	8	10	7	10		32	9		2	13	113	13			59		
Other Govt. Acts	1	4		3	11	10		16	2	1	7	5	18	10	106	83	5	12	100
State Highway																			
Departments	525	399	7108	1484	479	1819	2414	4093	4172	616	962	516	1582	2034	30627	2528	1769	454	35378
TOTALS	524	437	7457	1487	483	1925	2491	19521	566	4143	626	1011	532	1666	2124	13439	28571	1908	5151

NOTE: The status of motor vehicles as shown on this report includes all shipments by the U. S. Bureau of Public Roads.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
WAR MATERIALS BOARD

STATEMENT OF TRUCKS AND AUTOMOBILES DELIVERED TO
GOVERNMENT AGENCIES

Period: April 1, 1919 to July 1, 1927

	Light		Inter-	Neah	Heavy	Pierce		Standard	Kelly-		G.M.C.	Misc.		Automobiles		Total Total	
	Aviation	National				Quad	Aviation		Class "B"	Class "C"		Trucks	Trucks	Motor Bodge	Misc.	Automobiles	Total
Bu. Public Roads	13	19	3	19	3	56	57	118	5	10	7	3	53	205	116	49	370
Forest Service	20	18		18		29	3	68	1	1	2	50	14	41	18	59	269
Nat. Park Service	5	3		3		10	7	10	32		2	13	13	113		113	
Dept. of Comm.		8		8									2		1	1	3
Bu. of Rec.								3									5
Indian Service	1						4	6	1								12
Public Health Ser.						7										6	6
Dist. of Colum.																	13
U.S. Sol. Home									13							4	7
U.S. Housing Com.																	30
Dept. of Justice																	1
Bu. of Markets							1										1
Office of Sec'y																	4
& Mech. Shops																	
Biological Survey	1																12
F. H. Board																	1
Bu. Animal Ind.	1																8
Bu. Entomology																	1
Bu. Soils		2				1	3										36
Plant Ind.																	52
Chemistry	2					1	2										31
Alaska Rd. Com.																	42
Bu. Fisheries							2										2
TOTALS	9	38	49	49	3	106	77	212	2	50	16	84	90	328	133	61	523

NOTE: The status of motor vehicles as shown on this report includes all registrations by the U. S. Bureau of Public Roads.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
VAN MATERIALS BOARD

STATEMENT OF TRUCKS AND AUTOMOBILES DELIVERED TO THE SEVERAL
STATE HIGHWAY DEPARTMENTS

Period: April 1, 1919 to July 1, 1927.

	Light	Inter-	Med	Heavy	Pierce	Standard	Kelly-	Misc.	Total	Automobiles	Total							
	Aviation	National	Quad	Aviation	Federal	Arrow	Packard	White	Pearce	Y.M.C.	Glenn	10	Gar	Ford	Misc.	Auto	Vehicles	
Alabama	10	3	77	31	134	6	10	87	3	60	15	4	42	30	4	103	529	
Arizona	4	19	108	15	16	30	10	43	12	151	3	45	47	45	6	89	646	
Arkansas	42	33	220	33	4	1001	29	6	39	64	14	2	57	18	9	59	546	
California	21	2	161	23	16	691	16	19	52	133	200	8	1156	58	11	194	1310	
Colorado	3	1	40	10	8	94	4	42	2	27	28	24	24	17	6	26	761	
Connecticut	1	1	11	3	8	25	41	2	2	2	31	37	48	7	11	11	273	
Delaware	5	20	77	13	12	621	103	110	21	59	40	22	395	30	5	94	489	
Florida	13	6	204	30	12	88	6	26	1	22	40	107	8	950	130	12	1138	
Georgia	6	3	125	17	9	261	6	26	1	67	1	16	18	333	24	7	373	
Idaho	20	5	315	62	28	888	152	84	9	34	244	12	71	1221	118	25	1412	
Illinois	26	2	255	35	21	591	3	34	9	77	131	20	20	794	85	52	904	
Indiana	26	2	177	28	21	701	48	30	5	209	96	2	45	61	839	65	113	
Iowa	26	8	245	45	15	751	6	32	112	185	114	1	8	24	899	66	117	
Kansas	10	23	157	18	2	151	2	26	33	98	114	1	42	27	579	51	688	
Kentucky	18	1	124	21	13	111	2	6	20	45	88	31	12	12	483	16	109	
Louisiana	3	1	75	14	4	161	2	26	15	22	46	4	4	242	27	13	556	
Maine	11	2	111	66	4	271	51	39	19	2	2	7	7	58	505	16	561	
Maryland	3	2	166	27	17	421	42	27	11	46	2	5	5	263	27	61	395	
Massachusetts	11	14	231	53	17	491	107	57	23	52	193	32	63	49	1010	78	158	
Michigan	32	24	137	37	22	921	107	57	23	52	193	32	63	49	1010	78	158	
Minnesota	8	4	132	27	16	8	29	10	7	60	56	21	26	58	731	54	826	
Mississippi	1	12	293	34	2	571	80	43	4	112	263	8	12	49	454	55	519	
Missouri	9	1	162	31	15	311	9	22	3	112	66	13	10	48	1044	71	1162	
Montana	6	3	177	32	34	71	20	5	2	126	32	28	9	7	489	42	554	
Nebraska	2	2	160	37	18	181	14	25	10	50	32	2	23	21	528	61	627	
Nevada	2	2	140	18	10	401	16	18	3	50	78	1	23	21	322	20	368	
New Hampshire	17	2	140	18	10	401	16	18	3	50	78	1	23	21	322	20	368	
New Jersey	34	24	268	113	16	1021	155	59	38	116	11	18	1	13	153	19	170	
New Mexico	11	9	286	35	28	51	37	39	12	116	11	18	1	13	153	19	170	
North Carolina	7	9	84	24	28	1021	155	59	38	116	11	18	1	13	153	19	170	
North Dakota	30	4	404	73	7	41	92	69	31	29	290	9	9	33	353	30	405	
Ohio	2	4	165	2	2	201	125	16	60	80	102	1	43	29	91	1220	66	1359
Oklahoma	10	38	278	19	1	381	35	32	32	117	164	35	28	10	14	659	43	745
Oregon	1	1	22	3	5	3	5	7	2	4	10	8	25	39	1106	122	1260	
Pennsylvania	7	2	125	18	4	231	54	31	2	23	38	1	19	28	595	32	105	
Rhode Island	11	17	107	16	12	351	9	14	17	93	83	12	12	49	477	43	669	
South Carolina	11	2	198	41	4	351	9	14	17	93	83	12	12	49	477	43	669	
South Dakota	35	13	295	91	46	21	307	94	102	114	218	30	45	116	1679	159	1972	
Tennessee	10	19	77	12	10	711	64	24	1	44	26	5	5	25	399	22	423	
Texas	2	8	51	5	5	5	9	88	4	4	45	8	16	16	150	7	176	
Utah	2	3	158	62	15	91	70	88	15	40	103	88	11	70	785	57	975	
Vermont	14	6	98	14	12	301	21	31	3	209	264	9	44	15	28	798	37	875
Washington	3	6	75	21	1	221	24	10	35	164	39	56	17	18	503	24	569	
West Virginia	24	2	114	24	1	261	45	13	90	112	18	18	41	16	117	62	787	
Wisconsin	6	2	88	12	10	111	16	38	1	118	9	9	15	3	371	24	367	
Wyoming	525	399	7108	1054	474	1813	204	1140	681	4033	4172	616	92	1572	2014	1769	35176	

NOTE: The status of motor vehicles as shown on this report includes all registrations by the U. S. Bureau of Public Roads.



UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
WAR MATERIALS BOARD

SUMMARY OF EXPLOSIVES SHIPPED

Period: April 1, 1919 to January 1, 1926.

CONSIGNEE	T. N. T.	PICRIC ACID	SODIUM AND MISC.	DYNAMITE	PETROL	TOTAL
Bureau of Public Roads	8,214,950	1,420,000	486,450	1,770,550	1,544,900	13,561,326
U. S. Forest Service	312,000		821,700	1,161,800	2,876,650	5,172,150
National Park Service		30,000		1,205,220	344,300	1,579,520
Other Government Agencies	2,000	105,000	104,300	3,815,600	504,700	4,542,215
State Highway Commissions	14,708,775	2,801,950	2,824,488	171,800	8,883,250	31,609,062
Farmers for Land Clearing		7,720,461	14,119,150		40,536,950	62,376,561
TOTALS	23,237,725	12,077,411	18,356,088	8,124,970	54,690,750	118,840,834

All quantities shown in pounds.

STATUS OF CURRENT FEDERAL AID ROAD WORK

FOR THE FISCAL YEAR ENDING JUNE 30, 1928

AS OF DECEMBER 31, 1927.

B. P. R.-F. A.-A-1
B-DECEMBER 1927. A-1

STATES	BALANCE OF FEDERAL AID FUND AVAILABLE FOR NEW PROJECTS	* UNDER CONSTRUCTION				APPROVED FOR CONSTRUCTION				AMOUNT PAID STATES DURING FISCAL YEAR	COMPLETED AND PAID DURING FISCAL YEAR				AGREEMENTS NOW IN FORCE				P. S. & E. RECOMMENDED FOR APPROVAL BY DISTRICT ENGINEER				STATES				
		MILEAGE				MILEAGE					MILEAGE				MILEAGE				MILEAGE					MILEAGE			
		FEDERAL AID	ORIGINAL	STAGE		FEDERAL AID	ORIGINAL	STAGE			FEDERAL AID	ORIGINAL	STAGE		FEDERAL AID	ORIGINAL	STAGE		FEDERAL AID	ORIGINAL	STAGE			FEDERAL AID	ORIGINAL	STAGE	
ALABAMA	3,169,733.52	4,178,918.40	507.2	1.9	255,844.44	39.5	24.9	1,044,491.80	224,561.70	13.6	396.6	3,314,457.50	150.1	24.9	1,120,306.34	150.1	24.9	ALABAMA									
ARIZONA	3,990,180.11	827,674.26	66.1	4.4	17,284.44	0.2	0.6	224,560.25	45,065.92	16.7	66.1	1,725,591.29	0.2	0.6	17,284.44	0.2	0.6	ARIZONA									
ARKANSAS	2,550,709.69	3,534,759.02	231.3	5.7	134,682.03	9.4	0.3	1,134,324.72	1,325,916.26	77.9	111.4	2,713,739.34	48.5	6.7	955,691.71	48.5	6.7	ARKANSAS									
CALIFORNIA	5,076,302.87	3,537,204.51	285.1	12.4	20,057.34	2.9	48.6	530,080.64	48,486.64	0.9	271.1	3,176,126.80	16.9	16.9	311,135.05	16.9	16.9	CALIFORNIA									
COLORADO	3,515,685.60	1,502,000.00	16.3	2.0	82,920.00	5.6	17.0	950,618.76	1,387,482.49	38.8	24.7	2,849,989.14	170.2	2.0	82,928.30	170.2	2.0	COLORADO									
CONNECTICUT	789,258.75	3,597,374.38	69.6	16.3	269,730.00	18.0	17.0	950,618.76	1,387,482.49	38.8	24.7	2,849,989.14	170.2	2.0	82,928.30	170.2	2.0	CONNECTICUT									
DELAWARE	1,750,591.77	2,849,989.14	170.2	79.6	269,730.00	18.0	17.0	950,618.76	1,387,482.49	38.8	24.7	2,849,989.14	170.2	2.0	82,928.30	170.2	2.0	DELAWARE									
FLORIDA	2,064,070.41	2,657,948.76	175.3	79.6	50,000.00	10.7	10.7	1,500,687.11	2,657,948.76	108.3	14.1	925,682.53	109.7	21.9	477,151.01	109.7	21.9	FLORIDA									
GEORGIA	1,046,504.64	1,352,743.54	145.0	59.7	1,073,102.31	76.4	2.3	1,896,730.33	191,977.92	15.0	502.8	7,009,350.29	502.8	2.3	1,653,734.64	502.8	2.3	GEORGIA									
IDAHO	4,495,272.55	7,599,982.62	534.2	0.6	254,800.00	33.4	0.6	1,545,933.32	211,985.95	13.3	177.9	8,124,733.48	44.6	0.6	556,200.06	44.6	0.6	IDAHO									
ILLINOIS	1,951,071.31	5,355,213.54	534.0	20.4	153,734.66	11.0	17.3	1,840,279.33	1,831,248.49	259.7	40.9	4,970,291.29	351.2	177.9	595,931.00	351.2	177.9	ILLINOIS									
INDIANA	2,171,429.34	5,555,148.33	747.7	13.4	122,594.95	20.4	69.8	1,879,197.61	1,436,581.90	12.1	51.2	4,479,208.52	409.6	57.4	181,414.32	409.6	57.4	INDIANA									
KANSAS	2,171,429.34	5,555,148.33	747.7	13.4	122,594.95	20.4	69.8	1,879,197.61	1,436,581.90	12.1	51.2	4,479,208.52	409.6	57.4	181,414.32	409.6	57.4	KANSAS									
KENTUCKY	1,421,525.81	4,525,251.11	420.9	69.8	35,371.73	5.4	5.4	1,457,472.07	459,941.60	51.2	9.8	2,134,637.19	115.5	7.5	459,478.56	115.5	7.5	KENTUCKY									
LOUISIANA	1,054,508.26	1,751,935.28	140.0	7.5	832,170.56	53.6	5.6	490,955.44	552,031.69	44.9	40.5	2,134,637.19	115.5	7.5	459,478.56	115.5	7.5	LOUISIANA									
MAINE	1,735,312.82	745,846.35	55.3	15.4	43,956.00	5.6	5.6	268,130.73	443,485.15	40.5	9.8	2,134,637.19	115.5	7.5	459,478.56	115.5	7.5	MAINE									
MARYLAND	2,504,192.05	913,271.29	89.1	15.4	43,956.00	5.6	5.6	268,130.73	443,485.15	40.5	9.8	2,134,637.19	115.5	7.5	459,478.56	115.5	7.5	MARYLAND									
MASSACHUSETTS	2,504,192.05	913,271.29	89.1	15.4	43,956.00	5.6	5.6	268,130.73	443,485.15	40.5	9.8	2,134,637.19	115.5	7.5	459,478.56	115.5	7.5	MASSACHUSETTS									
MICHIGAN	2,550,941.43	6,099,100.00	210.7	3.8	48,000.00	11.6	6.5	1,531,823.28	152,294.74	9.6	110.3	1,819,545.01	112.4	12.6	2,226,060.18	99.3	6.5	MICHIGAN									
MINNESOTA	2,187,471.43	5,099,100.00	210.7	3.8	48,000.00	11.6	6.5	1,531,823.28	152,294.74	9.6	110.3	1,819,545.01	112.4	12.6	2,226,060.18	99.3	6.5	MINNESOTA									
MISSISSIPPI	1,797,105.63	2,936,907.80	319.9	26.9	146,208.63	29.9	26.9	1,256,544.72	167,108.12	31.4	4.9	8,802,530.40	314.9	22.1	280,595.23	314.9	22.1	MISSISSIPPI									
MISSOURI	2,905,095.12	3,592,019.13	264.1	38.6	182,843.62	24.0	38.6	1,720,735.60	1,234,973.65	99.0	9.8	3,518,649.57	260.0	34.7	256,213.18	260.0	34.7	MISSOURI									
MONTANA	5,530,103.10	2,533,153.05	302.3	8.4	689,437.11	132.5	39.6	1,193,380.38	289,989.05	50.5	4.9	3,311,687.66	434.7	8.4	10,912.50	434.7	8.4	MONTANA									
NEBRASKA	1,905,093.31	5,140,653.68	1,221.9	497.5	269,479.27	50.5	39.6	1,738,343.88	1,750,774.35	347.7	386.7	5,001,815.44	1,218.6	489.5	407,327.51	1,218.6	489.5	NEBRASKA									
NEVADA	1,905,093.31	5,140,653.68	1,221.9	497.5	269,479.27	50.5	39.6	1,738,343.88	1,750,774.35	347.7	386.7	5,001,815.44	1,218.6	489.5	407,327.51	1,218.6	489.5	NEVADA									
NEW HAMPSHIRE	370,492.65	1,502,964.14	185.3	26.0	41,091.94	8.7	26.0	472,413.31	495,568.11	67.9	10.7	1,390,311.92	171.1	26.0	150,928.76	171.1	26.0	NEW HAMPSHIRE									
NEW JERSEY	935,122.00	852,364.17	55.5	5.5	77,337.35	5.5	5.5	976,955.00	145,082.46	10.4	52.8	856,289.04	40.9	5.5	77,337.35	40.9	5.5	NEW JERSEY									
NEW MEXICO	2,450,950.22	2,519,773.46	214.8	34.6	720,802.50	45.6	8.8	868,981.51	439,188.20	52.8	8.8	2,291,294.11	212.2	8.8	228,479.35	212.2	8.8	NEW MEXICO									
NEW YORK	5,907,290.53	10,784,928.95	570.6	34.6	90,500.00	7.3	33.5	3,190,485.36	1,203,313.37	81.8	33.1	11,445,891.00	712.2	8.6	59,850.00	712.2	8.6	NEW YORK									
NORTH CAROLINA	2,244,269.97	1,553,015.52	92.0	34.6	90,500.00	7.3	33.5	3,190,485.36	1,203,313.37	81.8	33.1	11,445,891.00	712.2	8.6	59,850.00	712.2	8.6	NORTH CAROLINA									
NORTH DAKOTA	4,377,303.13	4,491,644.99	305.4	112.6	1,058,195.00	4.0	112.6	1,008,256.07	1,531,977.04	31.0	116.5	2,100,879.40	749.3	32.0	438,097.98	749.3	32.0	NORTH DAKOTA									
OKLAHOMA	1,347,542.03	2,348,245.64	340.5	13.8	1,077,332.10	123.5	11.4	675,915.06	379,544.99	9.6	17.9	2,230,357.05	346.2	35.2	1,205,505.69	346.2	35.2	OKLAHOMA									
OREGON	1,641,535.01	1,374,937.18	77.3	35.8	1,071,616.30	123.5	11.4	675,915.06	379,544.99	9.6	17.9	2,230,357.05	346.2	35.2	1,205,505.69	346.2	35.2	OREGON									
PENNSYLVANIA	4,359,094.24	3,638,610.23	361.5	3.0	606,016.34	40.0	40.0	1,959,975.13	95,970.87	69.6	37.3	5,390,129.33	37.3	35.0	384,291.24	37.3	35.0	PENNSYLVANIA									
RHODE ISLAND	1,853,722.53	336,638.74	20.8	11.4	12,773.67	9.2	9.2	296,387.48	227,206.00	15.1	7.5	381,902.41	20.9	7.5	107,610.00	20.9	7.5	RHODE ISLAND									
SOUTH CAROLINA	1,179,794.02	2,619,552.91	240.4	114.4	26,000.00	17.9	2.5	647,432.44	963,309.27	56.7	7.5	2,100,502.60	209.4	74.1	145,150.31	209.4	74.1	SOUTH CAROLINA									
SOUTH DAKOTA	1,179,794.02	2,619,552.91	240.4	114.4	26,000.00	17.9	2.5	647,432.44	963,309.27	56.7	7.5	2,100,502.60	209.4	74.1	145,150.31	209.4	74.1	SOUTH DAKOTA									
TENNESSEE	1,781,945.43	3,785,390.33	240.7	33.7	516,274.89	54.0	54.0	591,400.11	872,000.80	40.3	26.5	2,933,576.14	203.5	33.7	1,378,089.08	203.5	33.7	TENNESSEE									
TEXAS	7,207,358.38	2,625,742.90	772.7	33.7	2,075,125.67	181.1	138.7	2,248,514.40	3,255,590.84	287.7	113.9	1,816,100.59	156.3	14.5	1,711,738.57	156.3	14.5	TEXAS									
UTAH	1,048,498.58	2,035,223.37	169.9	14.5	34,058.72	4.0	4.0	2,428,514.40	3,255,590.84	287.7	113.9	1,816,100.59	156.3	14.5	1,711,738.57	156.3	14.5	UTAH									
VERMONT	395,746.54	693,331.78	43.3	4.0	83,000.00	65.5	65.5	953,905.39	202,124.28	14.0	5.3	2,183,600.00	125.1	4.0	104,087.72	125.1	4.0	VERMONT									
WASHINGTON	1,914,543.73	2,175,439.34	113.2	4.0	543,000.00	65.5	65.5	953,905.39	202,124.28	14.0	5.3	2,183,600.00	125.1	4.0	104,087.72	125.1	4.0	WASHINGTON									
WEST VIRGINIA	344,756.39	2,758,168.42	233.7	4.0	54,721.66	6.7	4.0	877,055.11	698,546.52	46.5	8.0	2,551,245.06	222.9	4.0	281,545.00	222.9	4.0	WEST VIRGINIA									
WISCONSIN	3,638,970.32	4,166,374.97	319.3	43.1	49,200.00	2.8	2.8	2,133,165.94	1,490,577.91	148.6	0.9	3,706,232.42	285.3	39.6	489,782.55	285.3	39.6	WISCONSIN									
WYOMING	949,432.41	1,554,451.69	243.3	75.7	39,155.55	19.8	19.8	735,476.29	757,973.29	44.1	43.5	1,417,830.53	247.0	75.4	175,786.72	247.0	75.4	WYOMING									
HAWAII	1,171,600.36	451,922.64	25.0	25.0				245,005.77	70,440.00	4.7	4.7	491,922.64	25.0					HAWAII									
TOTALS	110,803,334.92	145,627,433.46	13,433.1	2,127.2	12,895,511.85	1,413.2	338.0	48,412,469.64	38,291,028.53	3,682.6	1,059.0	137,278,971.82	1,139.6	1,997.4	21,243,973.49	1,676.7	467.9	TOTALS									

* INCLUDES PROJECTS REPORTED COMPLETED (FINAL VOUCHERS NOT YET PAID) TOTALING - FEDERAL AID \$53,473,669.30 - MILEAGE, ORIGINAL 4,916.2 - STAGE 831.3

BUREAU EXHIBIT AT CLEVELAND CONVENTION OF THE A.R.B.A.

(NOT FOR RELEASE)

THE MOST PROMINENT LOCATION IN THE CLEVELAND AUDITORIUM WAS RESERVED FOR THE BUREAU'S EXHIBIT AT THE NATIONAL GOOD ROADS SHOW HELD IN CONJUNCTION WITH THE ANNUAL CONVENTION OF THE AMERICAN ROAD BUILDERS ASSOCIATION AT CLEVELAND, OHIO, FROM JANUARY 9 TO 13. EXTENDING ENTIRELY ACROSS THE IMMENSE STAGE OF THE AUDITORIUM, THE BUREAU'S CONTRIBUTION COULD BE SEEN FROM END TO END OF THE EDIFICE.

THE OUTSTANDING FEATURE OF THE DISPLAY, DESIGNED ESPECIALLY TO BE SEEN FROM A DISTANCE, WAS A HUGE ELECTRIC SIGN PICTURING IN DIAGRAMMATIC FORM THE TRANSCONTINENTAL COURSE OF U. S. ROUTE 40. THE ROUTE WAS STUDDED WITH RED INCANDESCENT ELECTRIC BULBS WHICH LIGHTED PROGRESSIVELY FROM EAST TO WEST EVERY 10 SECONDS, CREATING THE EFFECT OF A WESTWARD BUILDING OF THE HIGHWAY.

AT THE EASTERN END OF THE ROUTE THERE WAS A PAINTING OF A BATHING SCENE AT ATLANTIC CITY, AND AT THE WESTERN TERMINUS WAS A SUNSET VIEW OF THE GOLDEN GATE, THUS INDICATING THE INTERCOASTAL CHARACTER OF THE GREAT MIDCONTINENT HIGHWAY. STATE BOUNDARIES AND THE PRINCIPAL CITIES ON THE ROUTE WERE CLEARLY MARKED AND IN EACH STATE THERE WAS A REPLICA OF THE STANDARD U.S. SHIELD MARKER BEARING THE NUMERALS 40 AND THE NAME OF THE STATE.

EXTENDING THE FULL LENGTH OF THE SIGN, THE SLOGAN "BUILD THE THROUGH ROADS THROUGH WITH FEDERAL AID" WAS PRINTED IN 14-INCH LETTERS; AND AT EACH END THERE WAS A BRIEF STATEMENT WITH REGARD TO THE CONDITION OF THE ROAD AND THE PART THAT FEDERAL AID HAS PLAYED IN ITS IMPROVEMENT.

ON THE LEFT END THE STATEMENT WAS AS FOLLOWS: "U.S. ROUTE 40 IS ONE OF THE TRANSCONTINENTAL ROUTES DESIGNATED BY STATE AND FEDERAL HIGHWAY OFFICIALS. IT IS CONTINUOUSLY PAVED FROM WILMINGTON, DEL., TO ST. MARY'S, KANS., A DISTANCE OF 1,234 MILES. FROM SALT LAKE CITY TO SAN FRANCISCO - 890 MILES - IT IS SURFACED; AND LESS THAN 14 PER CENT OF ITS 3,205-MILE LENGTH IS UNIMPROVED."

ON THE RIGHT WAS THE STATEMENT: "FEDERAL AID HAS BEEN A LARGE FACTOR IN THE IMPROVEMENT OF U.S. ROUTE 40. THE FEDERAL GOVERNMENT HAS ALLOTTED TO ITS IMPROVEMENT NEARLY 18 MILLION DOLLARS. FEDERAL-AID PROJECTS ON THE ROUTE INCLUDE 700 MILES OF PAVEMENT, 726 MILES OF SURFACED ROAD, 132 MILES OF GRADED ROAD, AND OVER 4 MILES OF BRIDGES."

THE SIGN, WHICH WAS 64 FEET LONG AND 10 FEET HIGH, WAS SUSPENDED ABOVE FIVE BOOTHS WHICH COMPLETED THE EXHIBIT. THE SUBJECTS OF THE BOOTH DISPLAYS WERE: WHAT FEDERAL AID HAS DONE FOR THE WESTERN STATES, THE NEW FREEDOM OF TRANSPORTATION, TAXATION WITHOUT REPRESENTATION, ROADS FROM SAVAGERY TO CIVILIZATION, AND WHAT FEDERAL AID HAS DONE FOR THE EASTERN STATES.

BECAUSE OF ITS STRATEGIC LOCATION, THE ATTRACTION OF ITS FLASHING ELECTRIC LIGHTS AND BRILLIANT PAINTINGS, AND THE GENERAL INTEREST IN ITS SUBJECT MATTER, THE EXHIBIT RECEIVED A GREAT DEAL OF FAVORABLE ATTENTION AND COMMENT.

MATERIALS ENGINEERS' INSTRUCTION COURSE IN PROGRESS IN WASHINGTON

CONTRIBUTED BY THE DIVISION OF TESTS.

(NOT FOR RELEASE)

A MATERIALS ENGINEERS' INSTRUCTION COURSE WAS BEGUN AT THE HEADQUARTERS OFFICE ON JANUARY 9 AND WILL CONTINUE UNTIL JANUARY 28. THE COURSE, WHICH IS UNDER THE DIRECTION OF THE DIVISION OF TESTS, CONSISTS OF A SERIES OF LECTURES COMBINED WITH LABORATORY WORK. WITH THE EXCEPTION OF THE OPENING SESSION, ALL THE LECTURES WILL BEGIN AT 9 A.M., AND WILL BE FOLLOWED BY A GENERAL DISCUSSION OF THE SUBJECT; THE LECTURE AND DISCUSSION TOGETHER TO CONSUME THE ENTIRE MORNING. IN THE AFTERNOON THE VARIOUS DISTRICT MATERIALS ENGINEERS, WHO HAVE BEEN DIVIDED INTO THREE GROUPS, WILL SPEND THEIR TIME IN THE LABORATORY. THE OBJECT OF THE COURSE IS TO FAMILIARIZE THE FIELD ENGINEERS WITH THE MODIFICATIONS IN THE METHODS OF TEST PRACTICE AND FIELD CONTROL THAT HAVE TAKEN PLACE SINCE THE LAST MATERIALS ENGINEERS' INSTRUCTION COURSE IN 1923. SATURDAYS WILL BE DEVOTED TO GENERAL DISCUSSIONS OF VARIOUS PROBLEMS IN WHICH THE MATERIALS ENGINEERS ARE INTERESTED, TO THE PREPARATION OF REPORTS AND TO STUDY IN THE LIBRARY.

THE LECTURE SCHEDULE FOLLOWS:

- JAN. 9 - OPENING REMARKS - - - - - E.F.KELLEY, B.P.R.
JAN. 12 - TESTING MACHINES - - - - - L.W.TELLER, B.P.R.
JAN. 13 - SUBGRADES - - - - - C.A.HOGENTGLER, B.P.R.
JAN. 14 - METAL CULVERTS - - - - - L.G.CARMICK, B.P.R.
GENERAL DISCUSSION OF REGULATIONS GOVERNING
MATERIALS CONTROL.
JAN. 16 - PAVEMENT TYPES - - - - - A.G.BRUCE, B.P.R.
JAN. 17 - FACTORS AFFECTING THE DURABILITY
OF AGGREGATES FOR CONCRETE - - G.F.LOUGH LIN, U.S.G.S.
JAN. 18 - HIGHWAY MATERIALS SPECIFICATIONS - J.H.STONE, B.P.R.
JAN. 19 - PERSONALITY AS AN AID TO THE
ENGINEER - - - - - H.S.FAIRBANK, B.P.R.
JAN. 20 - INTERPRETATION OF TEST RESULTS
NON-BITUMINOUS MATERIALS - - - - F.H.JACKSON, B.P.R.
BITUMINOUS MATERIALS - - - - - H.M.MILBURN, B.P.R.
JAN. 21 - DESIGN OF CONCRETE MIXTURES - - - - F.H.JACKSON, B.P.R.
JAN. 23 - DESIGN AND CONTROL OF BITUMINOUS
MIXTURES - - - - - W.J.EMMONS, MICH.
JAN. 24 - FIELD CONTROL OF CONCRETE - - - - - R.W.CRUM, IOWA.
JAN. 25 - CONTINUATION OF DISCUSSION OF FIELD
CONTROL OF CONCRETE - - - - - R.W.CRUM, IOWA.
JAN. 26 - ORGANIZATION AND OPERATION OF A STATE
HIGHWAY DIVISION OF MATERIALS - - H.S.MATTIMORE, PENNA.
JAN. 27 - GENERAL EXAMINATION
JAN. 28 - GENERAL DISCUSSION OF EXAMINATION PAPERS,

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BALTIMORE FIREMEN PROVE VALUE OF IMPROVED ROADS AND MOTORIZED EQUIPMENT

(NOT FOR RELEASE)

AN UNPRECEDENTED SERIES OF MAJOR CONFLAGRATIONS OF INCENDIARY ORIGIN WHICH OCCURRED IN WASHINGTON DURING THE EARLY MORNING HOURS OF JANUARY 17 HAS GIVEN RESIDENTS OF THE NATIONAL CAPITAL A NEW AND IMPRESSIVE DEMONSTRATION OF THE BENEFITS OF ROAD IMPROVEMENT AND MOTORIZED TRANSPORTATION WHICH WILL NOT BE SOON FORGOTTEN.

THE FIRST ALARM WAS RECEIVED AT 10:41 O'CLOCK OF THE PRECEDING EVENING, FOLLOWED IN THE NEXT FEW HOURS BY 23 ALARMS FROM WIDELY SEPARATED SECTIONS OF THE CITY, SOME OF THEM FALSE, OTHERS FOR ACTUAL FIRES, FOUR OF WHICH WERE OF MAJOR PROPORTIONS. BY 2 A.M., THE CAPITAL FIRE CHIEF, HIS FORCES TAXED TO THE UTMOST, REALIZED THAT MORE HELP WOULD BE NEEDED.

FROM THIS POINT THE STORY IS TOLD AS IT APPEARED IN THE WASHINGTON EVENING STAR OF JANUARY 17.

"A FEW MINUTES AFTER 2 O'CLOCK THIS MORNING FIRE CHIEF WATSON TELEPHONED SUCCINCTLY TO THE BALTIMORE DEPARTMENT, 'WE NEED HELP'. LESS THAN 10 MINUTES LATER TENTH BATTALION CHIEF GEORGE D. OTTER'S LITTLE RED CAR WENT DASHING THROUGH THE STREETS AND INTO THE DARKNESS ON THE 40-MILE RUN TO THE CAPITAL.

"BEHIND HIM WERE DEPUTY CHIEF LEWIN H. BURKHART, CAPT. CHARLES T. GALLION, SUPERINTENDENT OF MACHINERY, AND P. W. WILKINSON, SECRETARY OF THE FIRE BOARD. AND BEHIND THEM, AT ONE-MINUTE INTERVALS, CAME THE 10 COMPANIES AND AN AMBULANCE IN CHARGE OF DR. F. H. OGDEN, SURGEON OF THE DEPARTMENT.

"IT WAS A WILD RIDE AS THE HUGE FIRE FIGHTERS, WITH HEADLIGHTS BLAZING AND SIRENS WIDE OPEN, WENT SHRIEKING THROUGH THE DARKNESS. CARS SCURRIED TO THE SIDE OF THE ROAD, LIGHTS FLARED UP IN HOUSES AND CURTAINS WERE RAISED AS THE MIGHTY CAVALCADE PLUNGED PAST.

"THE LITTLE RED CARS WERE FAR IN THE LEAD SKIMMING OVER THE ROAD AT A DIZZY PACE. BEHIND THEM, PACKED CLOSELY TOGETHER, WERE THE ENGINES, SWAYING, BOUNCING AND LURCHING FROM SIDE TO SIDE, BUT KEEPING UP THEIR SPEED. IN THE REAR, READY FOR ANY EMERGENCY, WAS THE AMBULANCE.

"A FEW MINUTES AFTER 3 - LESS THAN 50 MINUTES FROM THE TIME HE LEFT HIS HOUSE - CHIEF OTTER DREW UP AT NO. 10 ENGINE HOUSE. THE OTHER OFFICIALS WERE CLOSE BEHIND HIM, AND NOT MANY MINUTES LATER THE ENTIRE FORCE WAS HERE. NO. 10 ENGINE OF BALTIMORE MADE THE RUN IN EXACTLY 1 HOUR AND 17 MINUTES."

THRILLED AS THEY ARE BY THE NOCTURNAL EXPLOIT OF THE BALTIMORE FIREMEN, RESIDENTS OF THE TWO CITIES OLD ENOUGH TO RECALL EVENTS OF 24 YEARS AGO HAVE NOT FAILED TO CATCH THE TRUE MORAL OF THE TALE, WHICH IS THE GREAT DEGREE TO WHICH THE PERFORMANCE DEPENDED UPON THE MODERN PAVED ROAD, OVER WHICH THE RUN WAS MADE, AND THE WONDERFUL EFFICIENCY OF MOTORIZED EQUIPMENT.

THE BALTIMORE FIREMEN WERE REPAYING A DEBT OF 24-YEARS STANDING. IT WAS IN 1904 THAT THERE OCCURRED IN THAT CITY THE DISASTROUS FIRE THAT WIPED OUT THE ENTIRE BUSINESS DISTRICT, THE CONFLAGRATION REACHING SUCH PROPORTIONS THAT IT WAS NECESSARY TO CALL FOR HELP FROM WASHINGTON. AT THAT TIME THE INTERCITY ROAD WAS UNIMPROVED, AND EVEN IF THERE HAD BEEN MOTOR ENGINES - THEN UNHEARD OF - THE RUN WOULD HAVE BEEN PRACTICALLY IMPOSSIBLE. THE WASHINGTON AUTHORITIES - NO LESS ANXIOUS THAN THEIR BALTIMORE FRIENDS TO ANSWER THE CALL FOR AID - FOUND IT NECESSARY TO LOAD THEIR HORSE-DRAWN EQUIPMENT ON A RAILROAD TRAIN, AND ALTHOUGH THEY ARRIVED IN TIME TO RENDER TWO DAYS OF VALIANT SERVICE SHOULDER TO SHOULDER WITH THEIR BROTHERS OF BALTIMORE, THE TIME CONSUMED IN REACHING THE FIRE UNDOUBTEDLY CONTRIBUTED TO THE PROPORTIONS OF THE DISASTER.

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CORRECTION

ON PAGE 6 OF THE NOVEMBER, 1927, NEWS LETTER, IT WAS REPORTED THAT BOTH THE STANDARD NUMBERED SHIELD MARKERS AND THE MISCELLANEOUS SIGNS WERE 100 PER CENT ERECTED ON THE UNITED STATES HIGHWAYS IN THE STATE OF WASHINGTON. THIS WAS INCORRECT ACCORDING TO INFORMATION RECEIVED FROM MR. PURCELL WHO REPORTS THAT NO SHIELD MARKERS HAVE BEEN ERECTED IN THE STATE, AND STANDARD CAUTION AND MISCELLANEOUS SIGNS HAVE BEEN ERECTED BY THE WASHINGTON BRANCH OF THE AMERICAN AUTOMOBILE ASSOCIATION TO A LIMITED EXTENT ONLY.

BITUMINOUS-TREATMENT-OF-EARTH-ROADS EXPERIMENT
BEGUN IN SOUTH CAROLINA

CONTRIBUTED BY J. T. PAULS OF THE DIVISION OF TESTS

(NOT FOR RELEASE)

FOR THE PURPOSE OF DEVELOPING A SUITABLE BITUMINOUS TREATMENT FOR THE LOOSE-BONDED SAND-CLAY ROADS, CHARACTERISTIC OF THE SOUTHEAST COASTAL SECTION OF THE COUNTRY, THE BUREAU, IN COOPERATION WITH THE SOUTH CAROLINA STATE HIGHWAY DEPARTMENT, HAS CONSTRUCTED, DURING THE PAST YEAR, AN EXPERIMENTAL HIGHWAY. THE EXPERIMENTS COVER A 21-MILE SECTION EXTENDING FROM CONWAY TO GALIVANTS FERRY, SOUTH CAROLINA. THIS ROAD IS AN ARTERIAL HIGHWAY TO THE COAST AND ITS ADJACENT SUMMER RESORTS, AND CARRIES RELATIVELY HEAVY TRAFFIC IN THE SPRING AND SUMMER MONTHS. FOUR STAGES IN THE CONSTRUCTION OF THE DOUBLE SURFACE-TREATMENT ON A MIXED-IN-PLACE BASE ARE SHOWN IN THE ACCOMPANYING PHOTOGRAPHS.

THE SAND-CLAY SOIL, WITH WHICH THESE ROADS ARE SURFACED, POSSESSES LITTLE NATURAL BINDER, AND IS COMPOSED FOR THE MOST PART OF FINE-GRAINED SAND PARTICLES. AS A RESULT, THE SURFACES BREAK DOWN AND BECOME EXCEEDINGLY DUSTY IN DRY WEATHER AND, WHEN WET, THEY CUT UP RAPIDLY AND BECOME ALMOST IMPASSABLE. THE UNSTABLE NATURE OF THE ROAD SURFACES IN THIS REGION, PRECLUDED THE USE OF THE ORDINARY TYPE OF BITUMINOUS SURFACE TREATMENT, AND IT WAS DECIDED, THEREFORE, TO INVESTIGATE VARIOUS TYPES OF BITUMINOUS MIXED-IN-PLACE TREATMENTS.

A CONDENSED DESCRIPTION OF THE EXPERIMENTAL SECTIONS IS GIVEN IN THE ACCOMPANYING TABLE.



APPEARANCE OF THE ROAD AFTER SCARIFYING



APPLYING BITUMINOUS MATERIAL AND DISCING



MIXING AND SHAPING WITH GRADER



APPEARANCE OF THE DOUBLE SURFACE TREATMENT
ON A MIXED-IN-PLACE BASE

TABLE SHOWING THE GENERAL NATURE OF THE SEVERAL EXPERIMENTS
TOGETHER WITH THE MATERIALS USED.

Exp. No.	SEC- TION No.	MIXED BASE DEPTH BITUMINOUS MATERIAL	BITUMINOUS SURFACE TREATMENT	COVER
1	A	2 : ASPHALT 150-180 PEN. : CUT-BACK WITH NAPHTHA	PRIME-SAME AS MIX. BINDER-ASPHALT (HOT) 150-200 PEN.	: STONE
1	B	2 : ASPHALT 85-100 PEN. : CUT-BACK WITH NAPHTHA	PRIME-SAME AS MIX. BINDER-ASPHALT (HOT) 150-200 PEN.	: STONE
2	A	2 : DO	: NO PRIME	: STONE
2	B	2 : DO	: DO	: PEA GRAVEL
2	C	2 : DO	: DO	: SAND
2	D	2 : ASPHALT 100-120 PEN. : CUT-BACK WITH NAPHTHA	: DO	: SAND
2	E	2 : DO	: DO	: PEA GRAVEL
2	F	2 : DO	: DO	: STONE
2	G	2 : ASPHALT 150-180 PEN. : CUT-BACK WITH NAPHTHA	: DO	: STONE
2	H	2 : DO	: DO	: PEA GRAVEL
2	I	2 : DO	: DO	: SAND
3	--	2 : STD. 5 ROAD OIL	: PRIME-SAME AS MIX. (FOR MACHINE MAINTENANCE)	: (FOR MACHINE MAINTENANCE)
4	A	3 : STD. 5 ROAD OIL WITH : PRESSURE STILL TAR.	: NONE	: :
4	B	3 : STD. 6 ROAD OIL WITH : PRESSURE STILL TAR	: DO	: DO
4	C	3 : FLUX A CUT-BACK WITH : PRESSURE STILL TAR	: DO	: DO
5	A	2 : ASPHALT 85-100 PEN. : CUT-BACK WITH NAPHTHA	: PRIME-No.4 ROAD OIL WITH PRESSURE STILL TAR	: SOIL
5	B	2 : DO	: PRIME-ASPHALT 150-180 PEN. : CUT-BACK WITH NAPHTHA	: SOIL
5	C	3 : DO	: DO	: SOIL
5	D	3 : DO	: PRIME-No. 4 ROAD OIL WITH PRESSURE STILL TAR	: SOIL
6	A	2 : TAR 18-25 SPEC. VISC.	: SAME AS MIX	: SOIL
6	B	3 : DO	: DO	: SOIL
6	C	2 : DO	: PRIME-SAME AS MIX : BINDER-TAR 25-35 SPEC. VISC.(COLD)	: STONE
6	D	2 : DO	: PRIME-SAME AS MIX : BINDER-TAR GRADE 2 (HOT)	: STONE
6	E	2 : DO	: DO	: STONE
7	A	2 : ASPHALT 85-100 PEN. : CUT-BACK WITH NAPHTHA	: PRIME-SAME AS MIX BINDER-ASPHALT (HOT) 150-200 PEN.	: STONE
7	B	2 : DO	: DO	: STONE
7	C	2 : DO	: NO PRIME	: STONE
8	--	-- : UNTREATED SAND CLAY	: BINDER-SAME AS MIX PRIME-TAR 8-13 SPEC. VISC. BINDER-ASPHALT (HOT) 150-200 PEN.	: STONE

CONSTRUCTION BY THE MIXED-IN-PLACE METHOD CONSISTED ESSENTIALLY OF SCARIFYING, SHAPING AND PULVERIZING THE ROAD SURFACE AFTER WHICH THE BITUMINOUS MATERIAL WAS APPLIED IN SEVERAL APPLICATIONS BY MEANS OF PRESSURE DISTRIBUTORS. THE SURFACE WAS DISCED LIGHTLY AFTER EACH APPLICATION. THIS PROVED VALUABLE IN PREVENTING LOSS OF THE LIGHTER CONSTITUENTS OF THE BITUMINOUS MATERIAL. MIXING WAS CARRIED ON BY MEANS OF A BLADE GRADER, THE PROCEDURE BEING TO CARRY THE TREATED MATERIAL FROM ONE SIDE OF THE ROAD TO THE OTHER. THIS PROCESS WAS CONTINUED UNTIL A UNIFORM MIXTURE WAS SECURED, AFTER WHICH THE MATERIAL WAS SPREAD, SHAPED, AND ALLOWED TO COMPACT UNDER TRAFFIC. FOR THOSE SECTIONS BUILT TO RECEIVE MACHINE MAINTENANCE THIS COMPLETED THE CONSTRUCTION. THE SECTIONS WHICH WERE TO RECEIVE A SURFACE TREATMENT WERE ALLOWED TO SET UP AND HARDEN FOR A WEEK OR TEN DAYS, AFTER WHICH THEY WERE GIVEN A SINGLE OR A DOUBLE SURFACE-TREATMENT AS INDICATED IN THE ACCOMPANYING TABLE.

DETAILED RECORDS WILL BE KEPT REGARDING THE MAINTENANCE COSTS AND SERVICE OF THE DIFFERENT SECTIONS SO THAT IN THE NEAR FUTURE THE COMPARATIVE VALUE OF THE VARIOUS TREATMENTS MAY BE DETERMINED.

PROGRESS OF FEDERAL HIGHWAY LEGISLATION

(NOT FOR RELEASE)

H. R. 107. - INTRODUCED IN THE HOUSE ON DECEMBER 5 BY O. B. BURTNESS OF NORTH DAKOTA, AND REFERRED TO THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE; PROVIDES REGULATIONS FOR THE CONSTRUCTION OF BRIDGES OVER NAVIGABLE WATERS OF THE UNITED STATES, AND FOR OTHER PURPOSES. NO SUCH BRIDGE WHICH IS TO BE PRIVATELY CONSTRUCTED, OWNED, AND OPERATED AS A TOLL BRIDGE UPON THE FEDERAL-AID OR STATE HIGHWAY SYSTEMS OR THEIR IMMEDIATE EXTENSION, SHALL BE BUILT UNTIL THE LOCATION, DESIGN, AND CONTRACT HAS BEEN APPROVED BY THE HIGHWAY DEPARTMENT OF THE STATE IN WHICH IT IS LOCATED; AND WHERE LOCATED BETWEEN TWO STATES, APPROVAL SHALL BE FROM THE HIGHWAY DEPARTMENT OF EACH STATE. IN THE EVENT OF THE FAILURE OR REFUSAL OF THE HIGHWAY DEPARTMENTS OF THE TWO STATES TO APPROVE THE STRUCTURE; THE LOCATION, DESIGN, AND CONTRACT SHALL BE SUBMITTED TO THE SECRETARY OF AGRICULTURE WHOSE DECISION SHALL BE FINAL.

PROVIDES THAT THERE SHALL BE NO DEVIATION FROM THE PLANS UNLESS APPROVED BY THE STATE HIGHWAY DEPARTMENT AND THAT THEY SHALL BE SUBJECT TO INSPECTION AND APPROVAL BOTH DURING CONSTRUCTION AND UPON FINAL COMPLETION.

IF AFTER THE BRIDGE IS ERECTED IT IS FOUND TO UNREASONABLY INTERFERE WITH NAVIGATION, THE ALTERATION MUST BE MADE OR THE OBSTRUCTION REMOVED AT THE EXPENSE OF THE BRIDGE OWNER.

THAT IN THE CASE OF A PRIVATELY-OWNED TOLL BRIDGE, THE TOLLS SHALL BE REASONABLE, AND SHALL NOT EXCEED SUCH RATES AS WILL PROVIDE AN ANNUAL REVENUE SUFFICIENT TO MEET THE ACTUAL NECESSARY OPERATING AND MAINTENANCE COSTS, AND YIELD A RETURN OF NOT TO EXCEED 10 PER CENT ON THE ACTUAL COST OF THE BRIDGE, AS FINALLY DETERMINED BY THE SECRETARY OF AGRICULTURE OR BY THE STATE HIGHWAY DEPARTMENT.

PROVIDES THAT PUBLICLY-CONSTRUCTED BRIDGES, INVOLVING THE ERECTION OF A STRUCTURE THE COST OF WHICH WILL BE IN EXCESS OF THE PUBLIC FUNDS WHICH MAY REASONABLY BE APPLIED THERETO, MAY BE OPERATED AS A TOLL BRIDGE. PROVIDES THAT TOLLS SHALL BE REASONABLE AND SHALL CEASE IN ANY EVENT WITHIN 25 YEARS OR WHEN THE STATE OR POLITICAL SUBDIVISION HAS BEEN REIMBURSED FOR THE CONSTRUCTION, FINANCING, AND MAINTENANCE OF THE STRUCTURE.

PROVIDES THAT WHERE THE STATE OR POLITICAL SUBDIVISION IS NOT ABLE TO FINANCE A BRIDGE THE STRUCTURE MAY BE CONSTRUCTED AND OPERATED AS A PRIVATELY-OWNED TOLL BRIDGE. PROVIDES REGULATIONS FOR THE ACQUISITION OF RIGHT OF WAY, THE RECAPTURE BY PUBLIC PURCHASE, THE ESTABLISHMENT OF REASONABLE TOLLS, THE SUBMISSION OF A SWORN STATEMENT AS TO THE ORIGINAL COST, ETC.

PROVIDES THAT A COMPLETE ACCOUNT SHALL BE MADE OF THE TOLLS COLLECTED IN ACCORDANCE WITH A UNIFORM METHOD PRESCRIBED BY THE STATE HIGHWAY DEPARTMENT.

PROVIDES THAT ANY PERSON WHO SHALL FAIL TO COMPLY WITH ANY LAWFUL ORDER OF THE SECRETARY OF WAR, MADE IN ACCORDANCE WITH THE PROVISIONS OF THIS ACT, SHALL, UPON CONVICTION, BE PUNISHED BY A FINE NOT EXCEEDING \$5,000, AND FOR EVERY ADDITIONAL MONTH IN DEFAULT SHALL BE SUBJECT TO A FINE COLLECTED AT THE RATE OF NOT EXCEEDING \$5,000.

THE ACT CONTINUES WITH OTHER MISCELLANEOUS PROVISIONS, AMONG THEM BEING ONE THAT THE ACT SHALL NOT APPLY TO THE CONSTRUCTION OF ANY BRIDGE BETWEEN THE UNITED STATES AND A FOREIGN COUNTRY.

H. R. 5772. - INTRODUCED IN THE HOUSE ON DECEMBER 5, BY G. E. CAMPBELL OF PENNSYLVANIA, AND REPORTED OUT FAVORABLY BY THE COMMITTEE ON THE JUDICIARY ON JANUARY 18: PROVIDES THAT EVERY FEDERAL AGENCY, BEFORE EXPENDING ANY FUNDS FOR ANY CONSTRUCTION PROJECT, ESTIMATED TO COST MORE THAN \$25,000, AND NOT CONSTITUTING MAINTENANCE OR REPAIR, SHALL PREPARE COMPLETE PLANS AND SPECIFICATIONS FOR SUCH PROJECT, TOGETHER WITH A DETAILED ESTIMATE OF THE ENTIRE COST.

H. R. 5800. - THIS IS THE URGENT DEFICIENCY BILL DESCRIBED IN THE PRECEDING NEWS LETTER. SINCE THE LAST ANNOUNCEMENT, THE BILL HAS PASSED BOTH HOUSES OF CONGRESS AND WAS SIGNED BY THE PRESIDENT ON DECEMBER 22, 1927. (PUBLIC No. 2)

H. R. 8269. - PASSED THE HOUSE ON JANUARY 11, 1928. MAKES APPROPRIATIONS FOR THE DEPARTMENTS OF STATE AND JUSTICE AND FOR THE JUDICIARY, AND FOR THE DEPARTMENTS OF COMMERCE AND LABOR, FOR THE FISCAL YEAR ENDING JUNE 30, 1929, AND FOR OTHER PURPOSES. MAKES AN APPROPRIATION OF \$3,000 TO PAY THE QUOTA OF THE UNITED STATES IN THE PERMANENT ASSOCIATION OF INTERNATIONAL ROAD CONGRESSES, AS AUTHORIZED BY THE PUBLIC RESOLUTION APPROVED JUNE 18, 1926.

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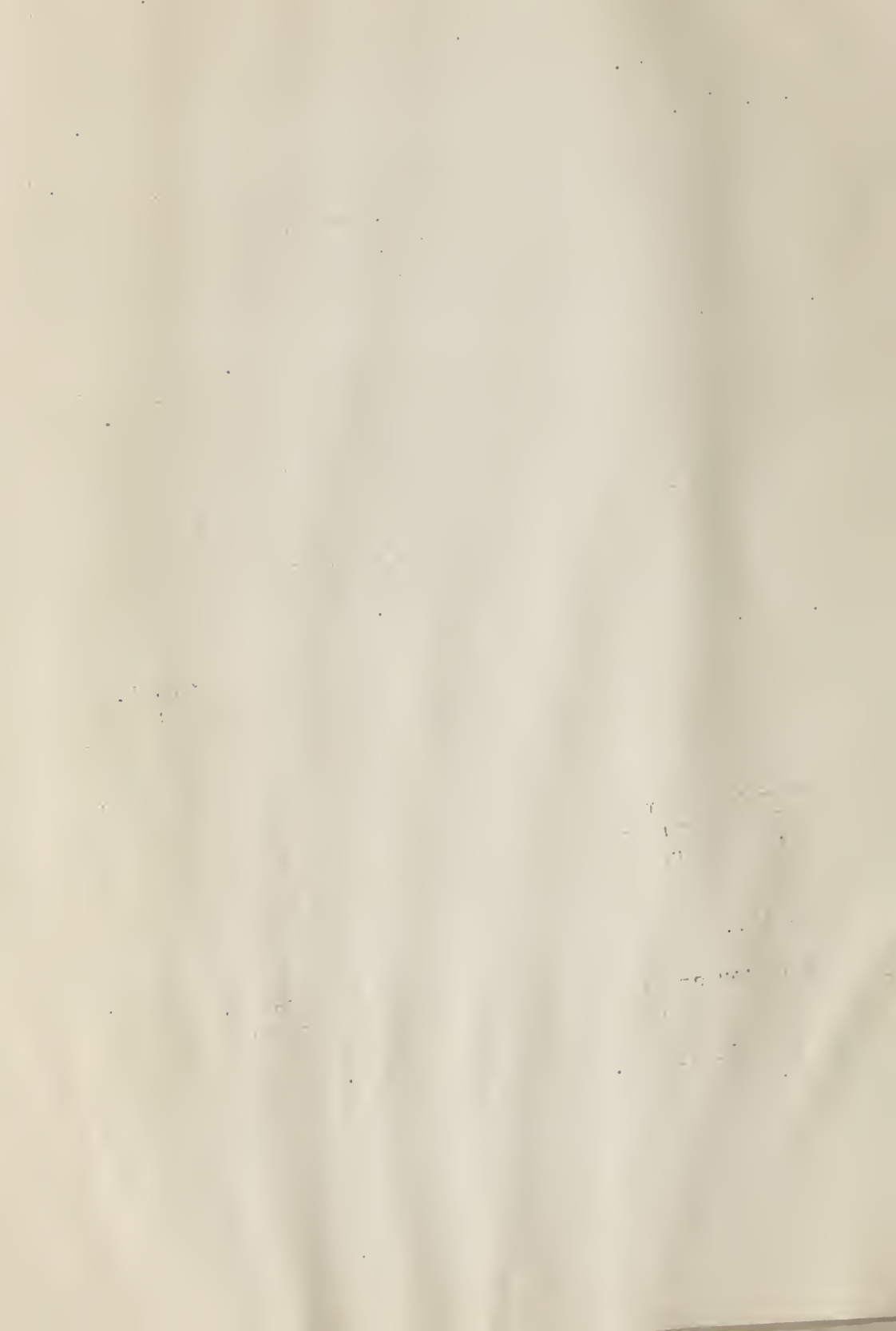
H. R. 8294. - INTRODUCED IN THE HOUSE ON JANUARY 4, BY SCOTT LEAVITT OF MONTANA, AND REFERRED TO THE COMMITTEE ON ROADS. AUTHORIZES AN APPROPRIATION OF \$2,153,000 FOR THE CONSTRUCTION OF A HIGHWAY FROM RED LODGE, MONTANA, TO THE BOUNDARY OF THE YELLOWSTONE NATIONAL PARK NEAR COOKE CITY, MONT. THE BILL PROVIDES THAT THE CONSTRUCTION OF THE HIGHWAY SHALL BE UNDER THE DIRECTION OF THE SECRETARY OF AGRICULTURE.

H. R. 8832. - INTRODUCED IN THE HOUSE ON JANUARY 7, BY R. W. MOORE OF VIRGINIA, AND REFERRED TO THE COMMITTEE ON ROADS: PROVIDES FOR THE AMENDMENT OF EXISTING FEDERAL HIGHWAY LEGISLATION TO AUTHORIZE AN APPROPRIATION OF \$150,000,000 FOR FEDERAL-AID ROADS FOR EACH OF THE FISCAL YEARS 1930, AND 1931; AND AN ADDITIONAL SUM OF \$15,000 (SIC) FOR FOREST ROADS AND TRAILS, UNDER SECTION 23, FOR EACH OF THE FISCAL YEARS 1930, AND 1931.

H. R. 8834. - INTRODUCED IN THE HOUSE ON JANUARY 7, BY W. F. STEVENSON OF SOUTH CAROLINA, AND REFERRED TO THE COMMITTEE ON ROADS: PROVIDES THAT EXISTING FEDERAL-AID HIGHWAY LEGISLATION BE AMENDED BY AUTHORIZING AN APPROPRIATION OF \$50,000,000 FOR EACH OF THE FISCAL YEARS 1929, AND 1930; TO BE EXPENDED IN THE IMPROVEMENT OF RURAL POST ROADS OVER WHICH RURAL CARRIERS TRAVEL IN SERVING THE RURAL ROUTES, OTHER THAN THOSE NOW INCLUDED IN THE FEDERAL-AID ROAD SYSTEM. THE FUNDS ARE PRORATED TO THE STATES UPON THE BASIS OF THE MILEAGE OF RURAL ROUTES, PROVIDED THAT THE STATES APPROPRIATE A LIKE AMOUNT, AND ARE TO BE ADMINISTERED IN THE SAME MANNER AS THE EXISTING FEDERAL-AID ROAD FUNDS.

H. R. 9360. - INTRODUCED IN THE HOUSE ON JANUARY 16 BY H. P. FULMER OF SOUTH CAROLINA AND REFERRED TO THE COMMITTEE ON ROADS: PROVIDES THAT EXISTING FEDERAL-AID HIGHWAY LEGISLATION BE AMENDED BY AUTHORIZING AN APPROPRIATION OF \$50,000,000 FOR EACH OF THE FISCAL YEARS 1929, AND 1930; TO BE EXPENDED IN THE IMPROVEMENT OF RURAL POST ROADS OVER WHICH RURAL CARRIERS TRAVEL IN SERVING THE RURAL ROUTES, OTHER THAN THOSE NOW INCLUDED IN THE FEDERAL-AID ROAD SYSTEM. THE FUNDS ARE PRORATED TO THE STATES UPON THE BASIS OF THE MILEAGE OF RURAL ROUTES, PROVIDED THAT THE STATES APPROPRIATE A LIKE AMOUNT, AND ADMINISTERED IN THE SAME MANNER AS THE EXISTING FEDERAL-AID ROAD FUNDS.

H. J. RES. 421. - INTRODUCED IN THE HOUSE ON JANUARY 4, BY C. C. DOWELL OF IOWA, AND REFERRED TO THE COMMITTEE ON ROADS: AUTHORIZES AN APPROPRIATION OF \$15,000 FOR THE EXPENSES INCIDENT TO THE PARTICIPATION BY THE UNITED STATES IN THE SECOND PAN AMERICAN CONFERENCE ON HIGHWAYS TO BE HELD IN RIO DE JANEIRO. THIS BILL IS IDENTICAL WITH S. J. RES. 30 WHICH WAS REPORTED IN THE PRECEDING NEWS LETTER.



H. J. RES. 136. - INTRODUCED IN THE HOUSE ON JANUARY 6, BY C. C. DOWELL OF IOWA, AND REFERRED TO THE COMMITTEE ON ROADS: PROVIDES FOR THE CREATION OF A PAN AMERICAN HIGHWAY COMMISSION TO BE COMPOSED OF THE SECRETARY OF STATE, THE SECRETARY OF AGRICULTURE, THE SECRETARY OF COMMERCE, AND FOUR CITIZENS OF THE UNITED STATES TO BE APPOINTED BY THE PRESIDENT. THE COMMISSION IS AUTHORIZED TO MAKE A STUDY, WITHIN THE UNITED STATES, OF SUCH PROBLEMS AS IT MAY CONSIDER TO BE RELATED TO POSSIBLE COOPERATION WITH THE REPUBLICS OF THE WESTERN HEMISPHERE SOUTH OF THE RIO GRANDE RIVER IN THE ESTABLISHMENT OF A SYSTEM OF HIGHWAYS BETWEEN THE UNITED STATES AND SUCH REPUBLICS. THE COMMISSION MAY MAKE REPORTS TO CONGRESS FROM TIME TO TIME AND SHALL MAKE A REPORT TO CONGRESS TOGETHER WITH RECOMMENDATIONS ON OR BEFORE THE FIRST MONDAY OF DECEMBER, 1929. IN ADMINISTERING THIS RESOLUTION THE COMMISSION IS AUTHORIZED TO MAKE USE, SO FAR AS IS CONSISTENT WITH THE BEST INTERESTS OF THE PUBLIC SERVICE, OF AGENCIES, OFFICES, AND EMPLOYEES OF THE EXECUTIVE BRANCH OF THE GOVERNMENT. THE COMMISSION MAY APPOINT AND FIX THE SALARY AND EXPENSES OF SUCH EMPLOYEES WITHOUT REGARD TO THE CLASSIFICATION ACT OF 1923 OR THE SUBSISTENCE EXPENSE ACT OF 1926. AN APPROPRIATION OF \$25,000 IS AUTHORIZED TO CARRY OUT THE PROVISIONS OF THE RESOLUTION.

S. 4182. - THIS BILL WAS DESCRIBED IN THE LAST NEWS LETTER. IT WAS AMENDED AND REPORTED OUT OF THE COMMITTEE ON JANUARY 9, 1928, AND PASSED OVER ON THE SENATE CALENDAR ON JANUARY 14.

S. 2327. - INTRODUCED IN THE SENATE ON JANUARY 9, BY L. C. PHIPPS OF COLORADO, AND REFERRED TO THE COMMITTEE ON POST OFFICES AND POST ROADS: AUTHORIZES THE APPROPRIATION OF \$75,000,000 AND \$7,500,000 FOR FEDERAL-AID, AND FOREST ROADS, RESPECTIVELY, FOR EACH OF THE FISCAL YEARS 1930, AND 1931. THIS BILL IS IDENTICAL WITH H. R. 383 WHICH WAS REPORTED IN THE PRECEDING NEWS LETTER.

S. 2427. - INTRODUCED IN THE SENATE ON JANUARY 9, BY C. C. DILL OF WASHINGTON, AND REFERRED TO THE COMMITTEE ON THE JUDICIARY. PROPOSES TO ENACT SUPPLEMENTAL SECTION 8853-1 TO SECTION 8853 OF THE GENERAL CODE RELATIVE TO PUBLIC RAILROAD CROSSINGS OF HIGHWAYS, AND TO PROVIDE THAT DRIVERS OR OCCUPANTS OF VEHICLES AT SUCH CROSSINGS GUILTY OF CONTRIBUTORY NEGLIGENCE SHALL NOT BE BARRED A RECOVERY.

S. 2475. - INTRODUCED IN THE SENATE ON JANUARY 11, BY W. L. JONES OF WASHINGTON, AND REFERRED TO THE COMMITTEE ON COMMERCE: PROPOSES TO CREATE A PROSPERITY RESERVE AND STABILIZE INDUSTRY AND EMPLOYMENT BY THE EXPANSION OF PUBLIC WORKS DURING PERIODS OF UNEMPLOYMENT

AND INDUSTRIAL DEPRESSION. IN ADDITION TO THE AMOUNTS NORMALLY AND USUALLY APPROPRIATED, IT AUTHORIZES AN APPROPRIATION OF \$75,000,000 FOR FEDERAL-AID ROADS. NO APPROPRIATION IS TO BE MADE IN PURSUANCE TO THIS ACT UNTIL THE PRESIDENT COMMUNICATES TO CONGRESS THAT THE VOLUME, BASED UPON VALUE, OF CONTRACTS AWARDED FOR CONSTRUCTION WORK IN THE UNITED STATES, HAS FALLEN 20 PER CENT FOR A THREE-MONTH PERIOD BELOW THE AVERAGE OF THE CORRESPONDING THREE-MONTH PERIODS OF 1926 AND 1927.

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PURCELL TO BECOME CALIFORNIA STATE HIGHWAY ENGINEER

(NOT FOR RELEASE)

EFFECTIVE MARCH 1 NEXT, CHARLES H. PURCELL, FOR NEARLY 10 YEARS IN CHARGE OF DISTRICT 1 OF THE BUREAU, WITH HEADQUARTERS AT PORTLAND, ORE., WILL RESIGN HIS POSITION TO BECOME STATE HIGHWAY ENGINEER OF CALIFORNIA; SUCCEEDING R. M. MORTON IN THAT CAPACITY. DURING HIS TENURE OF OFFICE AS DISTRICT ENGINEER, MR. PURCELL HAS DEVELOPED AN ORGANIZATION THAT HAS CARRIED ON PRACTICALLY ONE-HALF THE FOREST ROAD CONSTRUCTION OF THE BUREAU, IN ADDITION TO THE FEDERAL-AID ROAD WORK IN OREGON AND WASHINGTON, AND RECENTLY THERE HAS BEEN ADDED TO HIS RESPONSIBILITY AN EXTENSIVE ROAD PROGRAM IN THE NATIONAL PARKS. THE QUALITY OF THE ROADS BUILT UNDER HIS DIRECTION, AS WELL AS THE CORDIAL RELATIONS HE HAS MAINTAINED WITH THE STATE HIGHWAY OFFICIALS AND OTHERS WITH WHOM THE ACTIVITIES OF THE BUREAU HAVE BROUGHT HIM INTO CONTACT, MARK HIM AS AN ORGANIZER AND EXECUTIVE OF EXTRAORDINARY CAPACITY. MORE THAN THIS HE WILL TAKE WITH HIM THE GOOD WILL OF THE BUREAU AND OF HIS SUBORDINATES, WHO WILL EXPECT, WITH HIS BACKGROUND OF EXPERIENCE, TO SEE HIM DEVELOP A HIGHLY-EFFICIENT ROAD-BUILDING ORGANIZATION IN CALIFORNIA.

MR. PURCELL WAS BORN AT NORTH BEND, NEBR., ON JANUARY 27, 1883 AND WAS GRADUATED, IN 1906, FROM THE STATE UNIVERSITY AT LINCOLN, WITH THE DEGREE OF BACHELOR OF SCIENCE IN CIVIL ENGINEERING. SUBSEQUENTLY HE PERFORMED ONE YEAR'S POST GRADUATE WORK AT STANFORD UNIVERSITY, AT PALO ALTO, CALIF.

FOLLOWING HIS UNDERGRADUATE WORK, FOR A PERIOD OF ONE YEAR, HE WAS ENGAGED AS CHIEF ENGINEER DRAFTSMAN, ON STEEL AND REINFORCED CONCRETE MILL BUILDINGS, AND IN THE DESIGN OF A DOUBLE-TRACK STEEL VIADUCT IN THIS COUNTRY. IN 1907, RESPONDING TO A LUCRATIVE OFFER FROM SOUTH AMERICA, HE BECAME PRINCIPAL ASSISTANT TO THE CHIEF ENGINEER OF THE CERRO DE PASSO MINING COMPANY, OF LIMA, PERU.

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WHILE WITH THIS ORGANIZATION, HE WAS IN CHARGE OF THE DESIGN AND CONSTRUCTION OF STEEL VIADUCTS, CONCRETE ARCHES, AND MILL BUILDINGS. WISHING TO RETURN TO THE STATES, HE SEVERED HIS SOUTHERN CONNECTION IN 1910 AND ENGAGED IN STRUCTURAL WORK, PRELIMINARY DESIGNING OF MILL BUILDINGS, ETC., WITH HEADQUARTERS IN SAN FRANCISCO. IN JUNE 1911, HE WENT TO THE PACIFIC NORTHWEST AND TOOK A POSITION AS DESIGNER AND ESTIMATOR FOR THE COWLITZ BRIDGE COMPANY, OF PORTLAND, ORE. IN AUGUST, 1913, HE WAS APPOINTED BRIDGE ENGINEER FOR THE OREGON STATE HIGHWAY DEPARTMENT. THIS POSITION HE RELINQUISHED, IN 1915, TO BECOME BRIDGE ENGINEER FOR MULTNOMAH COUNTY, ORE., WHERE HE WAS IN RESPONSIBLE CHARGE OF THE DESIGN AND CONSTRUCTION OF A NUMBER OF THE BRIDGES ON THE FAMOUS COLUMBIA RIVER HIGHWAY.

MR. PURCELL ENTERED THE BUREAU ON JANUARY 9, 1918, AS A SENIOR HIGHWAY BRIDGE ENGINEER AND, ON APRIL 1, 1919, WAS PROMOTED TO ASSISTANT DISTRICT ENGINEER UNDER DR. HEWES, WHO WAS THEN IN CHARGE OF THE PORTLAND OFFICE, AND IN AUGUST, 1919, WAS PROMOTED TO DISTRICT ENGINEER IN WHICH CAPACITY HE HAS RENDERED VALUABLE SERVICE CONTINUOUSLY FOR NEARLY 10 YEARS.

